

# ACTRE

## LEVEL 1-1

# Notebook System Level 1 Training Material

## Statement of Confidentiality

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*Ver. 4.0*

# Overview

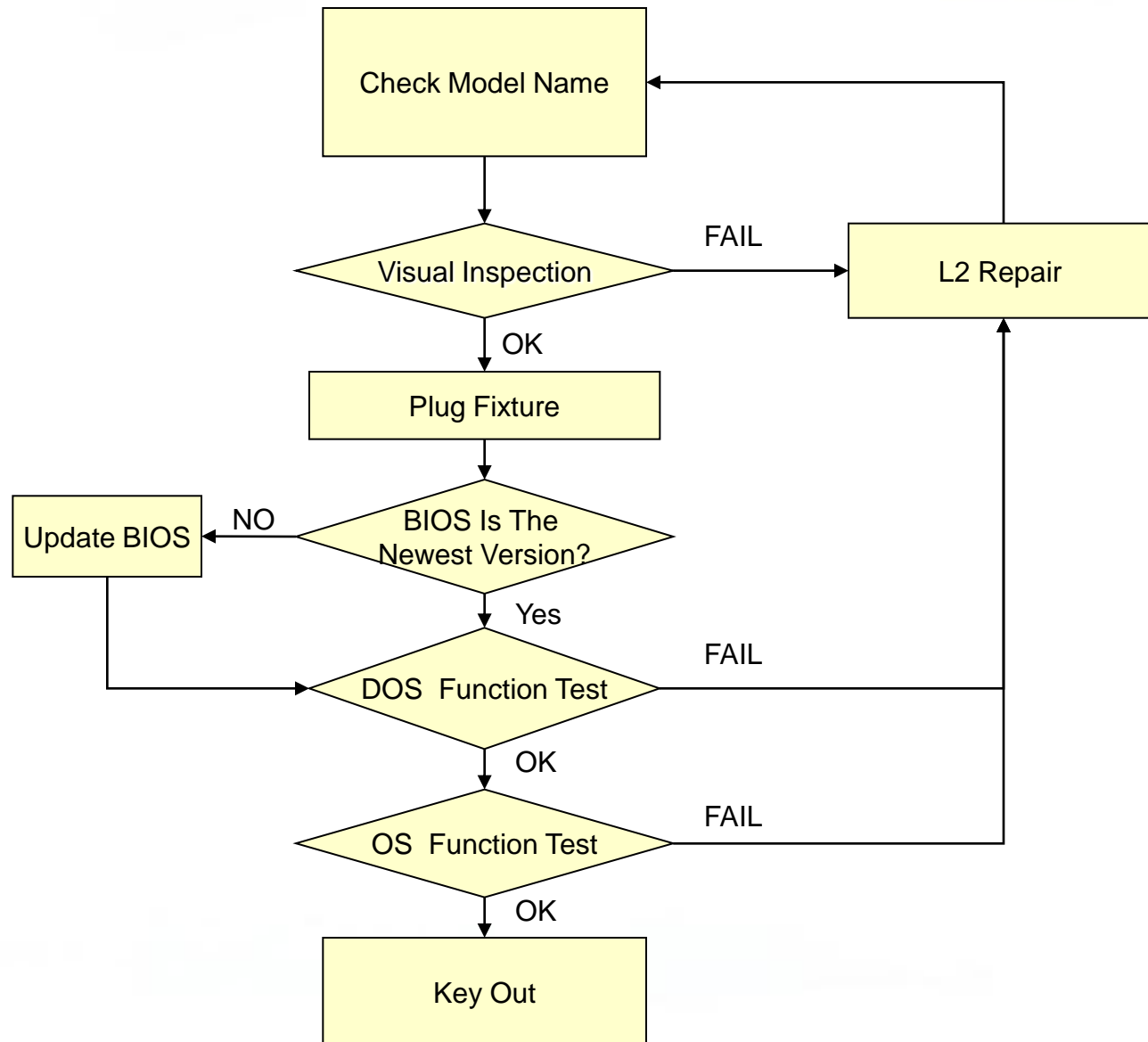
- Chapter 1      Testing/ Repair Flow Chart
- Chapter 2      Customer Induced Damage (CID) Criteria
- Chapter 3      NB Test Tools
- Chapter 4      Visual Inspection
- Chapter 5      Plug Fixture
- Chapter 6      Updating BIOS
- Chapter 7      Windows Testing Program
- Chapter 8      Seagate HDD Test Program

# Chapter 1

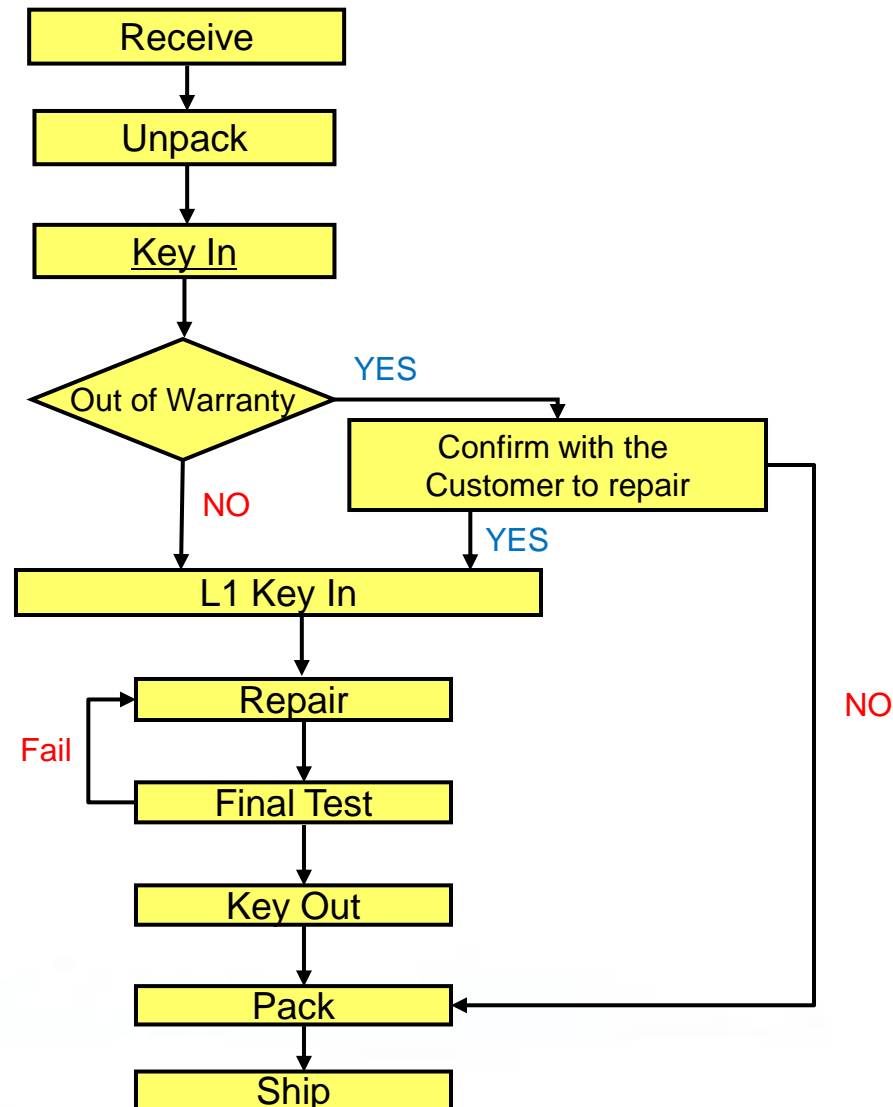
## Testing/ Repair flow chart



# Test flow chart



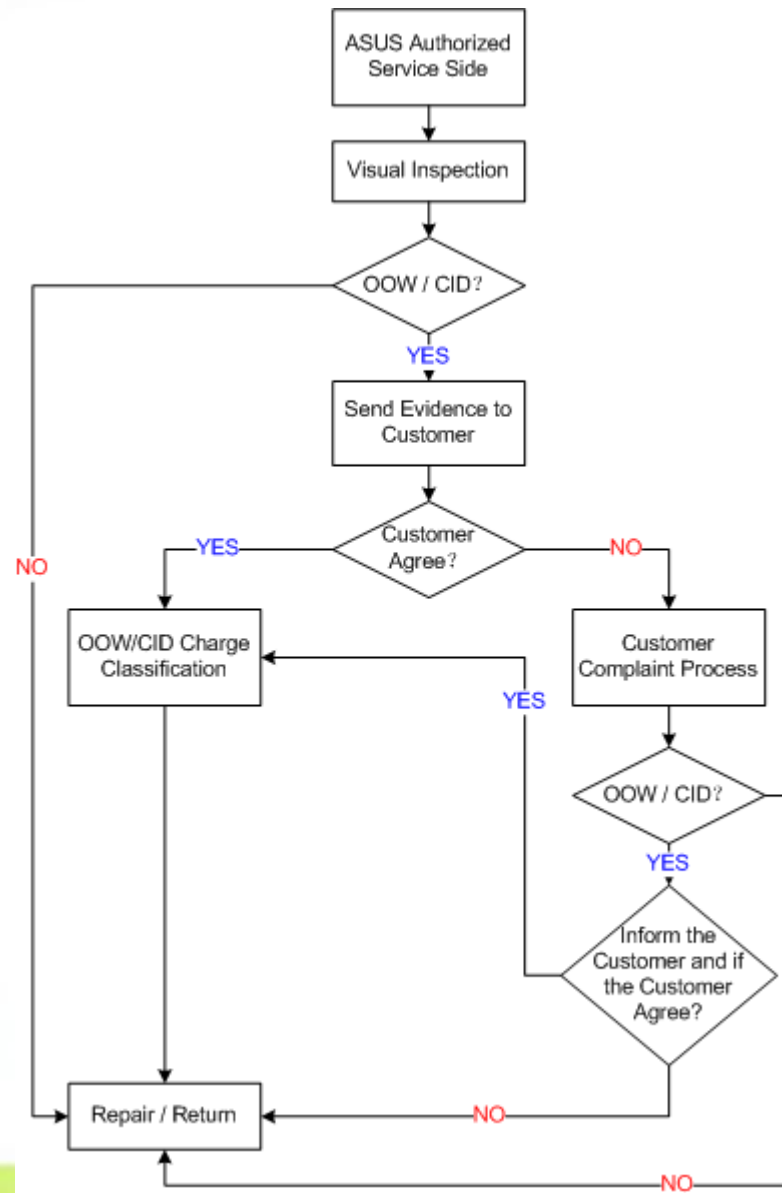
# Repair Flow Chart



# Chapter 2

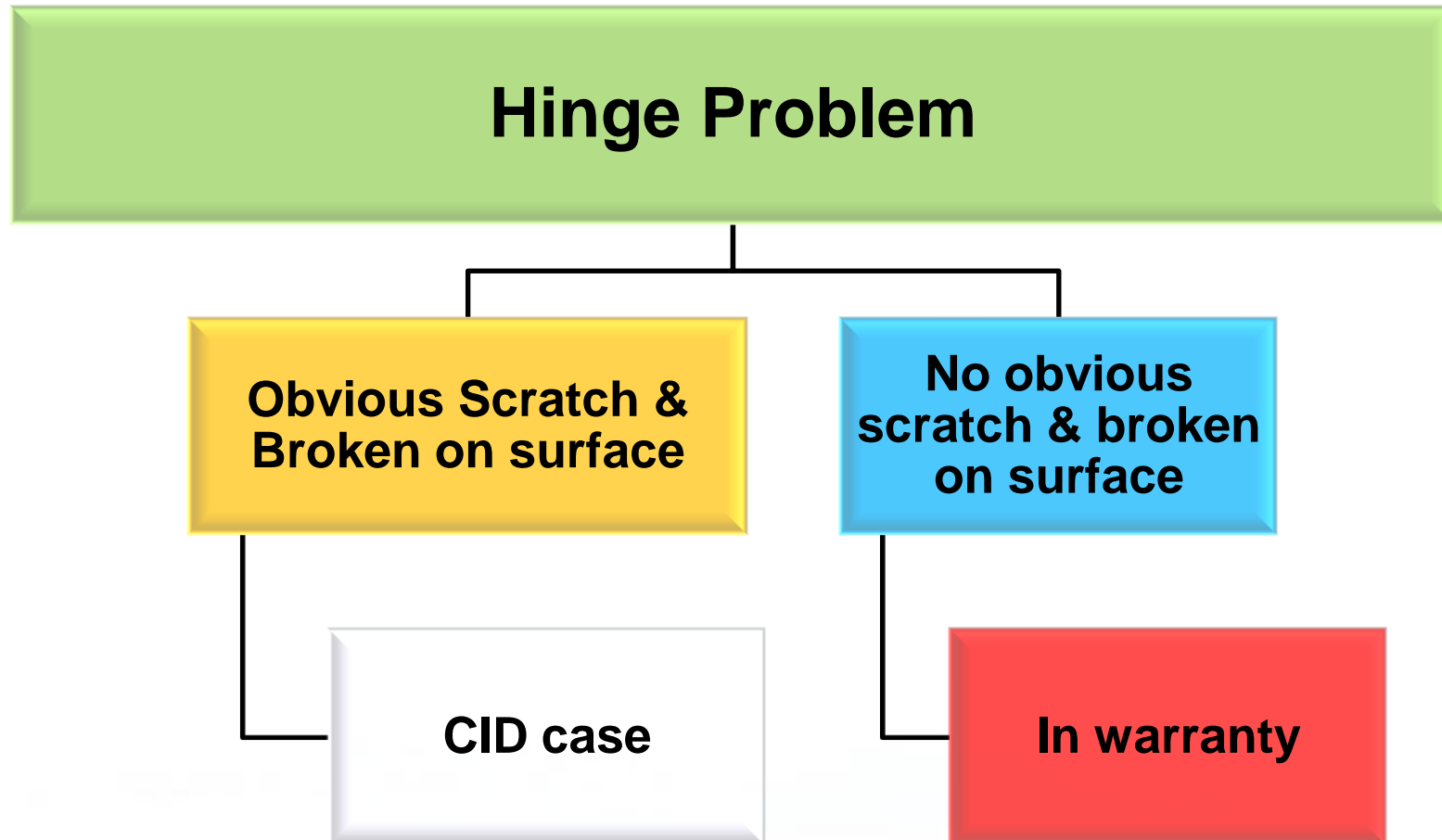
## Customer Induced Damage (CID) Criteria

# CID&OOW Service Process Basic Flow Chart



# CID for Hinge Problem Flow Chart

The flow chart is for hinge problem which is in warranty.



# Surface – Painting Peel Off



1



2



3



4



5

Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Painting peel off [Figure1-5]	LCD bezel or top case worn or painting peel off	Exchange or thicken the rubber	-	Free	Charge
		-	Exchange related parts	Charge	Charge
	LCD cover or bottom case worn or painting peel off	-	Exchange related parts	Charge	Charge

# Surface - Broken



6



7



8



9



10

Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Broken [Figure 6-14]	Not caused by hit or dropped	TBD	-	-	-
	Caused by hit or dropped or customer induced	Exchange related parts	-	Charge	Charge



# Surface - Broken



11



12



13



14



# Keyboard



15

Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Keycap drop off [Figure 15]	Keycap drop off	Reinstall (If user preserves the keycap)	-	Free	Free
	Keycap drop off	-	Exchange the keyboard	Charge	Charge

# Keyboard – Oxidation



16



17

Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Keyboard Oxidation [Figure 16-17]	Liquid soak into the keyboard and the top case.	-	Exchange the parts which was soaked by the liquid	Charge	Charge

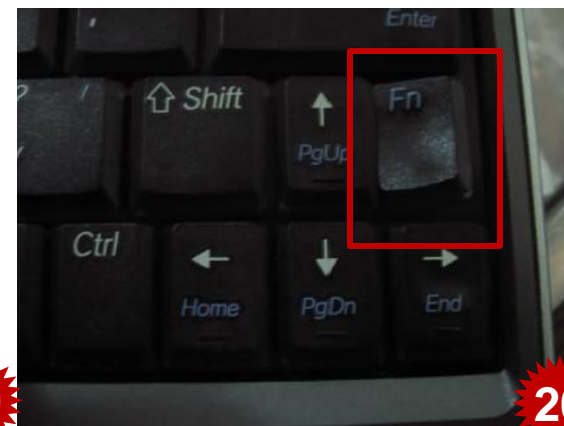
# Keyboard - Broken



18



19



20

Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
KeycapTwist [Figure 18-20]	Keycap twisted heated by the outside	-	Exchange the keyboard	Charge	Charge
	Keycap twisted by other reasons	TBD	-	-	-

# Keyboard / Touch Pad Abraded



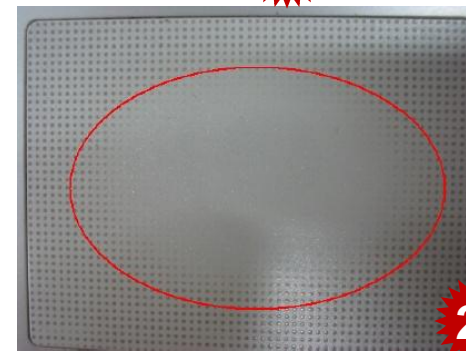
21



22



23



24

Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Keyboard or Touch Pad abraded [Figure 21-24]	Keyboard or Touch Pad was polished by the abrasion.	-	Exchange the keyboard or Touch Pad	Charge	Charge
	The sign on the keyboard or Touch Pad was drop off	-	Exchange the keyboard or Touch Pad	Charge	Charge

# Adapter– Surface Damaged



25



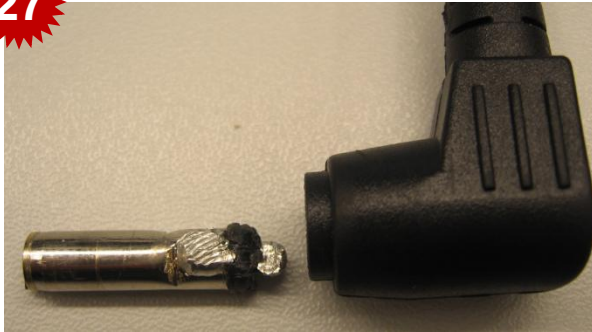
26

Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Adapter surface damaged [Figure 25-26]	Adapter surface has water mark or melted or broken.	-	Exchange the adapter	Charge	Charge



# Adapter – Cable Damaged

27



28



29



30



Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Adapter Cable damaged [Figure 27-30]	Cable broken and the plastic outside abraded	-	Exchange the adapter	Charge	Charge

# Adapter – Label Damaged



31

Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Adapter label damaged [Figure 31]	Label removed, scribbled or damaged seriously	-	Exchange the adapter	Charge	Charge

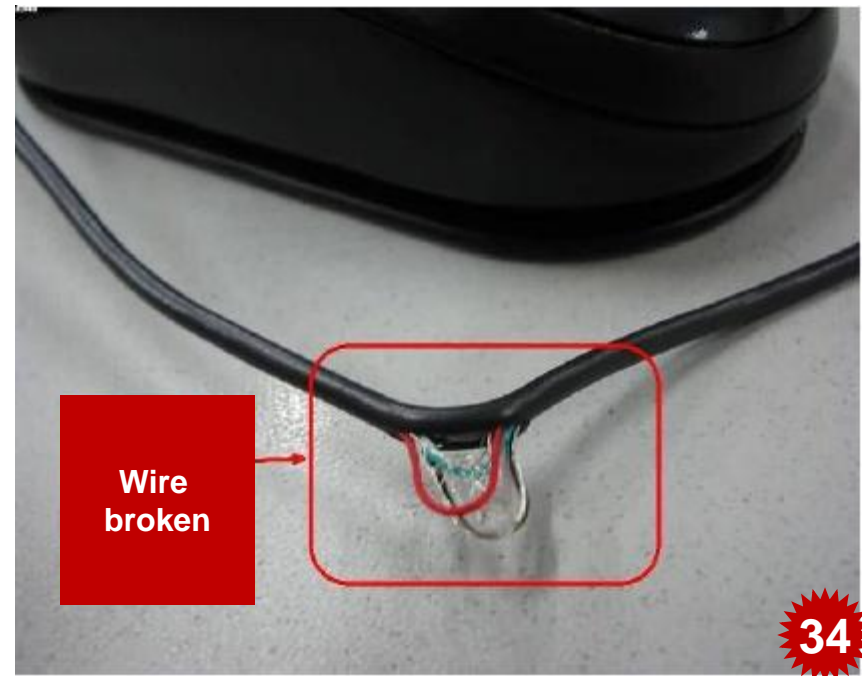
# Mouse – Surface Damaged



Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Surface Damaged [Figure 32]	The surface of the mouse split or damaged.	-	Exchange the mouse	Charge	Charge



# Mouse – Cable damaged



Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Cable Damaged [Figure 33-34]	Cable twisted or wire broken	-	Exchange the mouse	Charge	Charge

# Mouse – Label Damaged



Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Label Damaged [Figure 35-36]	Label tear up by customer or disassembled after damaged	-	Exchange the mouse	Charge	Charge

# ODD – Mechanical Damaged



37

Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Mechanical Damaged [Figure 37]	The hook broken, damaged or missed so that the ODD couldn't read the disk.	-	Exchange the ODD	Charge	Charge

# ODD – Mechanical Damaged



38

ODD bracket broken



39

ODD tray out of shape



40

Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Mechanical Damaged [Figure 38-40]	Includes: ODD bracket broken, ODD tray out of shape, data cable damaged, etc.	-	Exchange the ODD	Charge	Charge

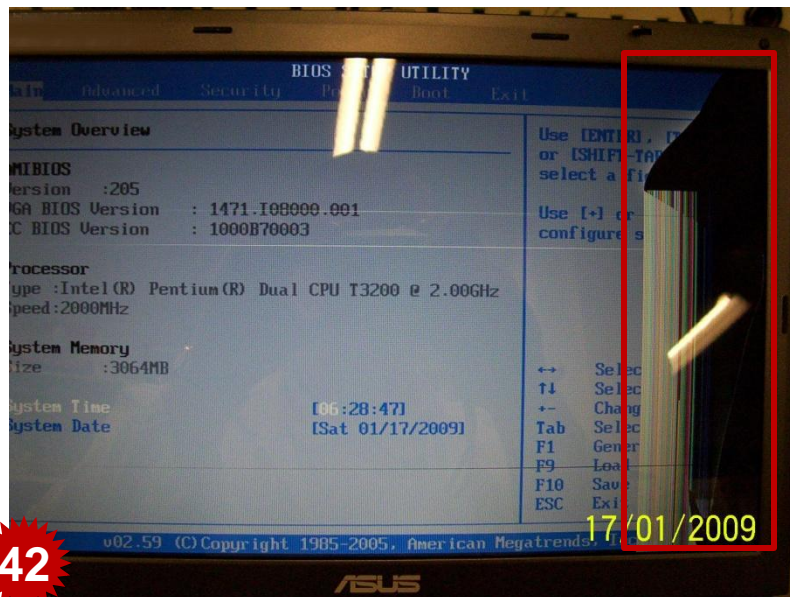


# ODD



Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Separate from the main machine [Figure 41]	ODD separates from the main machine, data cable damaged	-	Exchange the ODD	Charge	Charge

# LCD



Damage	Comments	Repair Way	Charge
LCD Broken [Figure 42-43]	Panel crack and mural are considered caused by drop, press or misuse	Replace the panel	Yes

# Machine Oxidation



Damage	Comments	Repair Way	Charge
Liquid inside [Figure 44-45]	<p>It may be caused by misuse, ex:</p> <p>(a) Customer try to self-repair and use wrong way to clean to get the oxygenation.</p> <p>(b) 潑 Splashed by liquid.</p>	<p>Check other parts and complete function first.</p> <p>Replace the damage parts</p>	Yes

# Machine Burned



46



47

Damage	Comments	Repair Way	Charge
NB Burned [Figure 46-47]	Require to check the cause of such case carefully and seriously. If unable to judge the endures responsibility, please feedback to ASUS HQ.	Replace the hole NB	TBD



# Chapter 3

## NB Test Tools

# ASUS NB Test Tools

NB Test Tools			
P/N	Part Description	Picture	Quantity
14G110060377	AC POWER CORD L:80cm		1
20-521042381	Memory Stick Card		1
20-TT2600048	SCANDISK SD MEMORY CARD		1
16-T10550508	ASUS TEST DISC		1
80-C1G362-0A04	DIAG_EZUSBMINI		4
22-060000050	USB CABLE		4
	External Monitor		1
	HDMI extension cable		1

# ASUS NB Test Tools

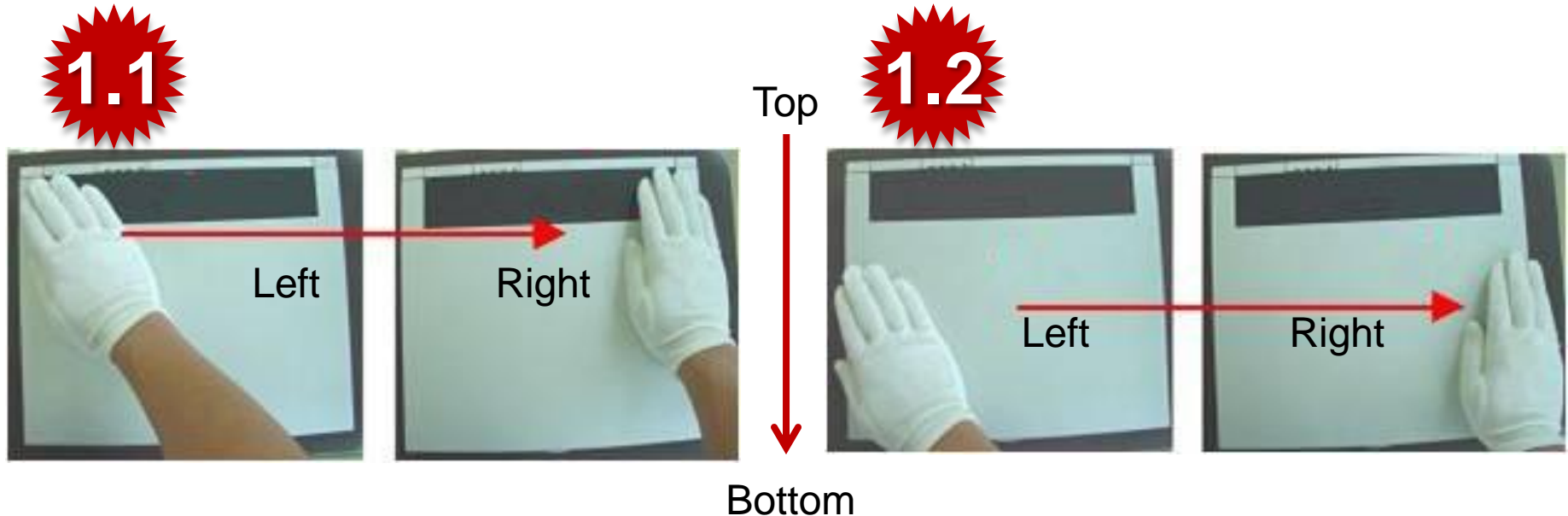
**TOOLING BAG :16-000500007**



# Chapter 4

## Visual Inspection

# Visual Inspection Manner



- 1.Method and sequence for appearance inspection
- (1)Take down notes while reading:
- While inspecting, the operator's focus need to follow by their hand.

# Back Cover & Shake LCD

2.1



1. Check if the scratch, stain, paint, bright line of LCD cover are under inspection spec.
2. Tear LCD back cover Mylar.

2.2

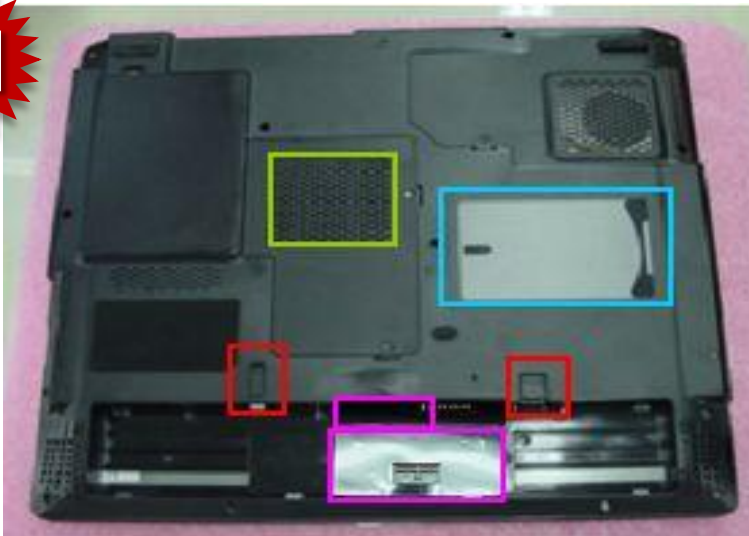


1. Shake LCD module 3 times to check if hinges have some noise.



# Check Bottom Case

3.1



3.2



1. Checking if the gap in the bottom case is under spec.
2. Check bottom case appearance that scratch, stain, print, color different, spray paint defector others appearance need to tally with inspection standard.
3. Check battery latch function well.
4. Check hole of speaker and DDR door no foreign objects.
5. Check the top case Mylar and battery Mylar are on NB, can't permit they are oblique or loss.
6. Check business card folder is stick on bottom case (for ASUS A3 series)
7. Check if scratch, stain, print, bright line of bottom case are under inspection spec.

# Check Border Area

4.1



1. Check if the scratch, stain, paint, bright line of front side are under inspection spec.
2. Don't tear bottom case IR lens Mylar.

4.2



1. Check if the scratch, stain, print, bright line of right side are under inspection spec.

4.3

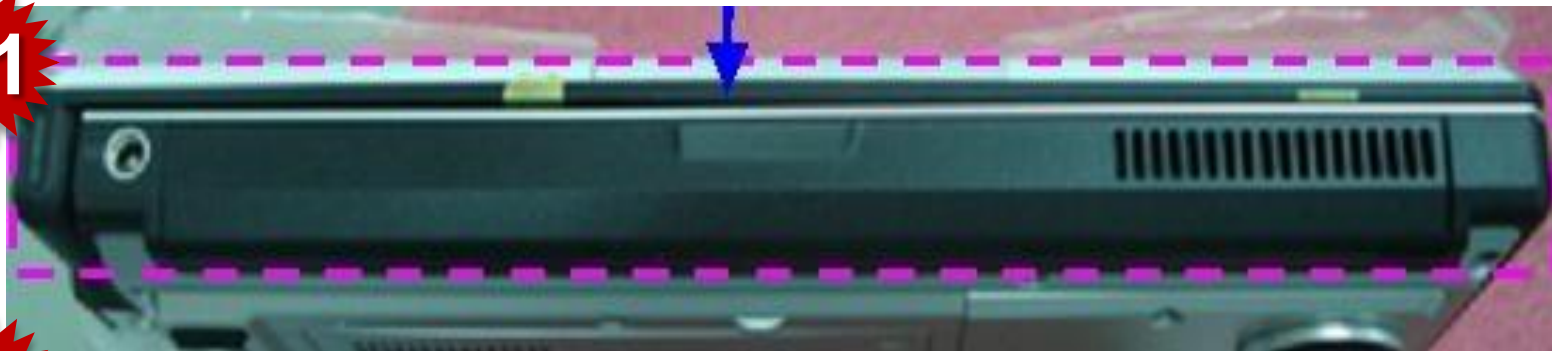


1. Check if the scratch, stain, paint, bright line of rear side are under inspection spec.
2. Tear LCD back cover Mylar.



# Check Inside Cover

5.1



5.2



1. Check if the scratch, stain, paint, bright line of left side under inspection spec.
2. Checking if there is any foreign object inside each jack of NB left side.

# Check Gap & Device

6.1



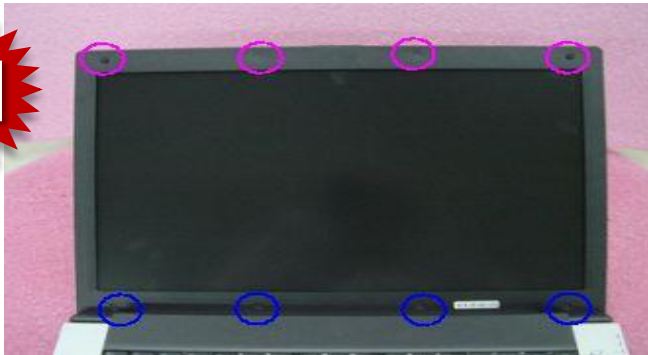
6.2



1. Checking if the gap between LCD module and top case is under spec.
2. Checking if the scratch or pant off on the NB front side is under spec.
3. Checking if there is any foreign object inside each jack of NB left side.

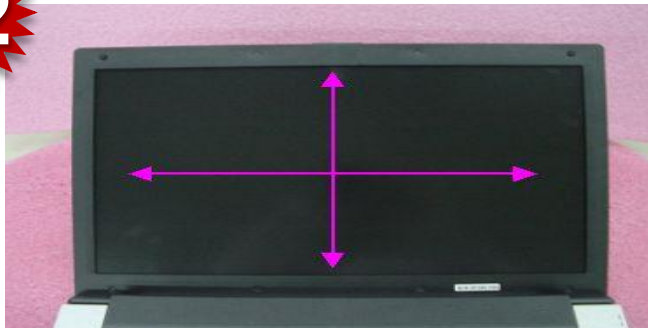
# Check LCD Surface & Rubber

7.1



1. Confirm if there is scratch on the LCD panel.
2. Checking the gap between LCD panel and LCD bezel is under spec.
3. Confirm if LCD panel is glare.

7.2

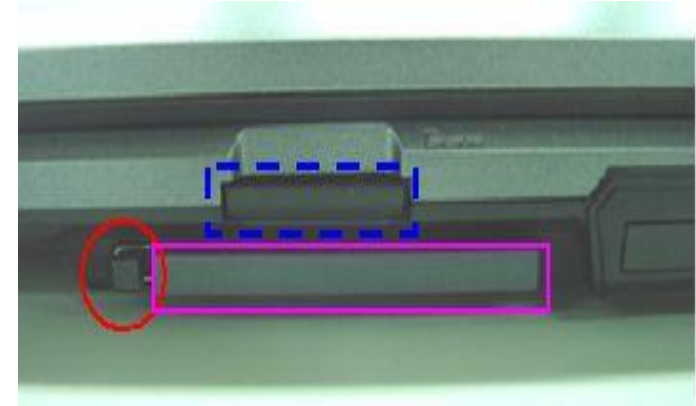


1. Confirm if there are 4 Mylar & 4 rubbers on the LCD bezel.
2. Check printing logo on LCD bezel.



# Check PCMCIA & Top Case

8.1



1. Check if the PCMCIA push button function well.

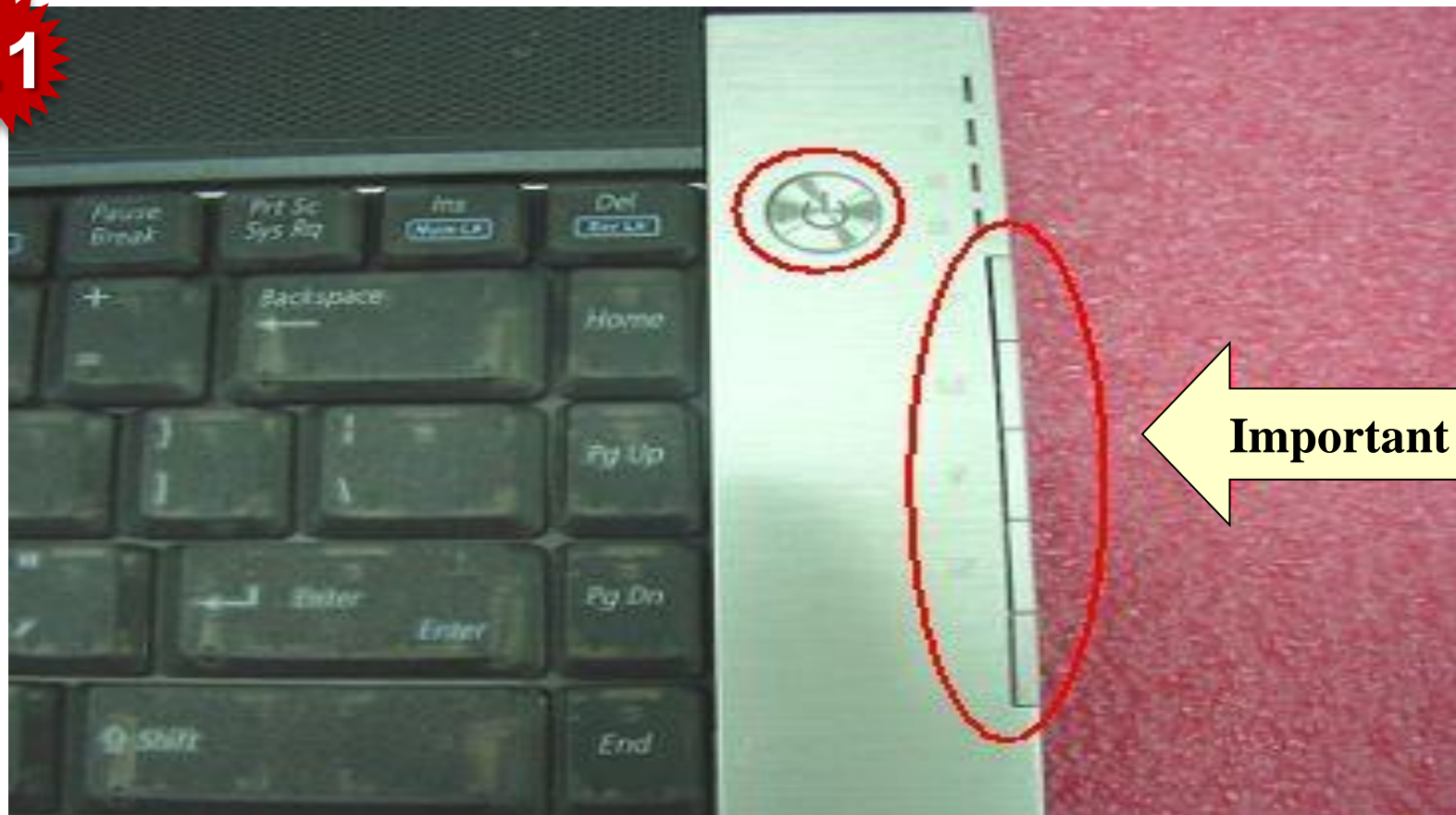
8.2



1. Checking if there are Windows, Intel inside label, ATI label, CSR label, TNT label, Dolby label, Spec label, Promotion label had stuck on the top case.

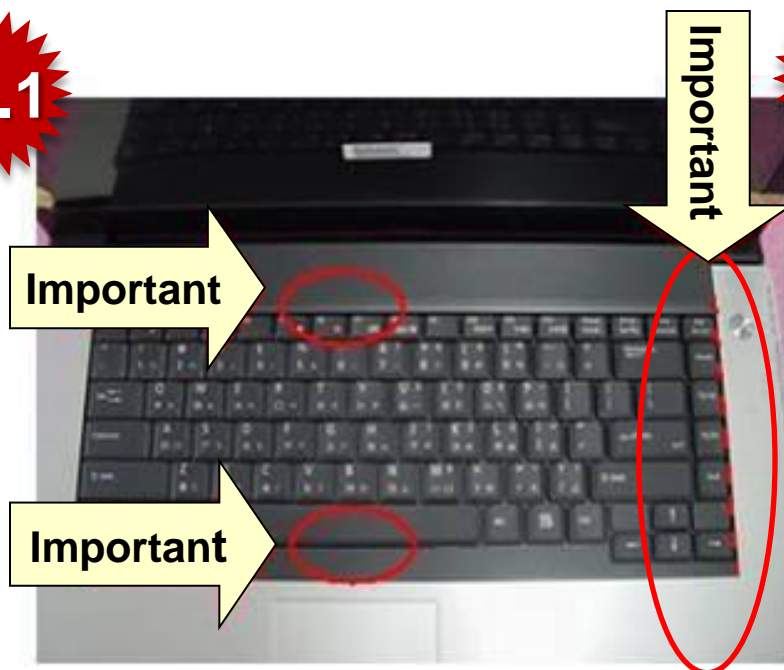
# Check Function Button

9.1



1. Checking if the power button and fast key works smoothly. Checking if the gap, scratch, painting off, color difference or others surface defect of button are under standard.

# Check Keyboard

**10.1****10.2**

1. Checking if the K/B right side cannot saw VAG thermal module.
2. Make sure K/B and K/B cover wedge in top case and GAP under spec.
3. Use the palm of both hands to hit lightly K/B and make sure key of K/B have not floating, missing, noise and moving.



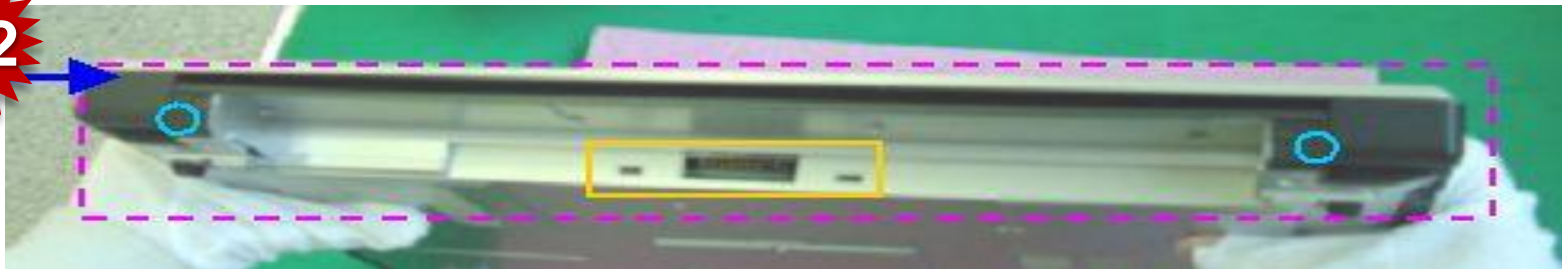
# Check Bottom Case & Charge Pin

11.1



1. Checking if the gap, scratch, stain, painting off, color difference or others surface defect of bottom case are under standard.
2. Checking if the battery can slide smoothly and functioning.

11.2



1. Checking the gap between hinge covers and top case are under spec.
2. Checking if the scratch or pant off on the NB back side is under spec.
3. Checking if there is any foreign object inside each jack of NB right side.
4. Checking if there are 2 screws Mylar in the bottom case.

# Check Battery & Warranty Label

12.1



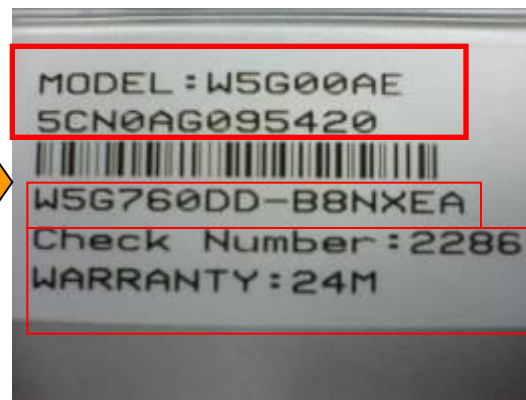
For ASUS



For  
HITACHI(OEM)

Label cannot stuck over frame.

12.2



Check machine model  
number Name EX:W5AE

# Check All Label & Cotton Paper



1. Confirm that number of 90 S/N pasted on machine is the same with on traveling card on bottom case.

2. Take the label-checking Mask putting on bottom case.



Put a anti-dust on the keyboard.

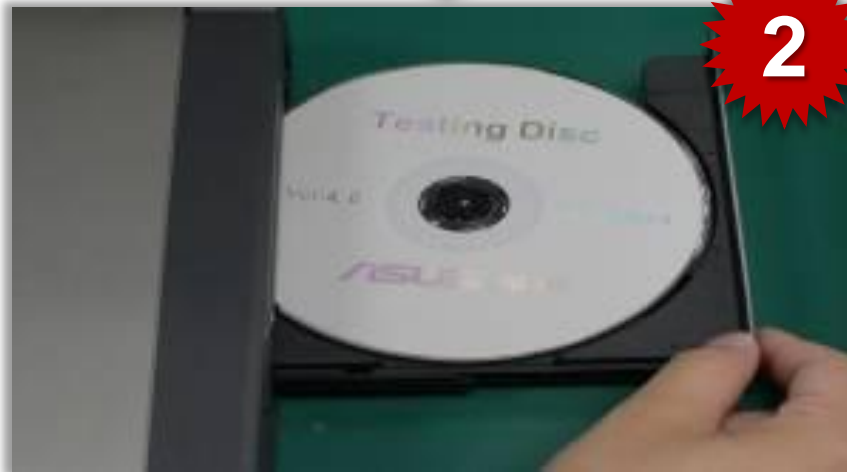
# Chapter 5

## Plug Fixture

# Plug Fixture



1. Connect LAN Loop Back Plug



2. Put Test CD into ODD and reboot to run ASUS NB pretest programs



# Plug Fixture



3. Connect USB port plug.



4. Connect MS PRO card plug.

# Chapter 6

## Updating BIOS

- Flashing BIOS introduction
- Preparation
- Flashing BIOS in Operating System
- Flashing BIOS in DOS mode
- Flashing BIOS in BIOS setup utility
- Jig Board

# Flashing BIOS Introduction

Updating BIOS could be the first option for the troubleshooting of the Notebook PC because the new BIOS revision will solve some problems. (Read the BIOS release information provided on the download site before using.)

**Four** ways to flashing BIOS:

Software:

1. Win flash in Operating System
2. A flash in NBDOS
3. Easy Flash in BIOS SETUP UTILITY

Hardware:

4. Jig Board3

**Warning:**

Careless updating can result in your Notebook PC having more problems.

# Preparation

Before starting flashing BIOS, please plug in the adapter so as to avoid the power off in the flashing process, which will lead to the BIOS flashing failure.



# Flashing BIOS in Operating System



# Precondition

Two preconditions mentioned before starting to update the BIOS in OS:

1. Download the exact BIOS files from the ASUS website

- Before starting updating BIOS in OS, please verify the NB model then download the corresponded BIOS files from the ASUS website.
- The BIOS file can be found in the website as below:  
<http://www.asus.com>

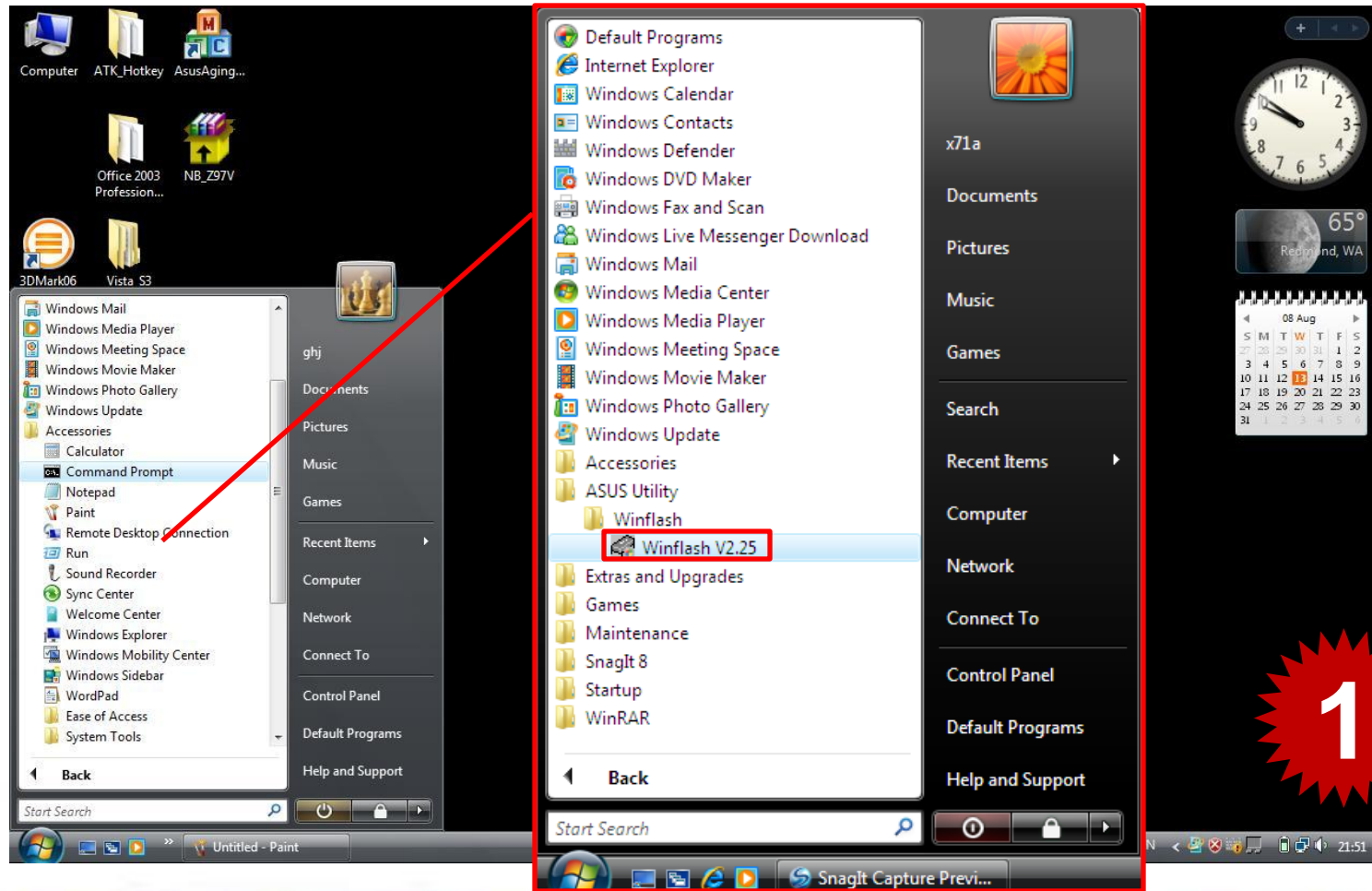
2. Please ensure the updating program 'Winflash Utility' has been installed in your NB before you start BIOS updating.

The program can be installed from the Driver & Utility CD.

# Flashing BIOS in Operating System

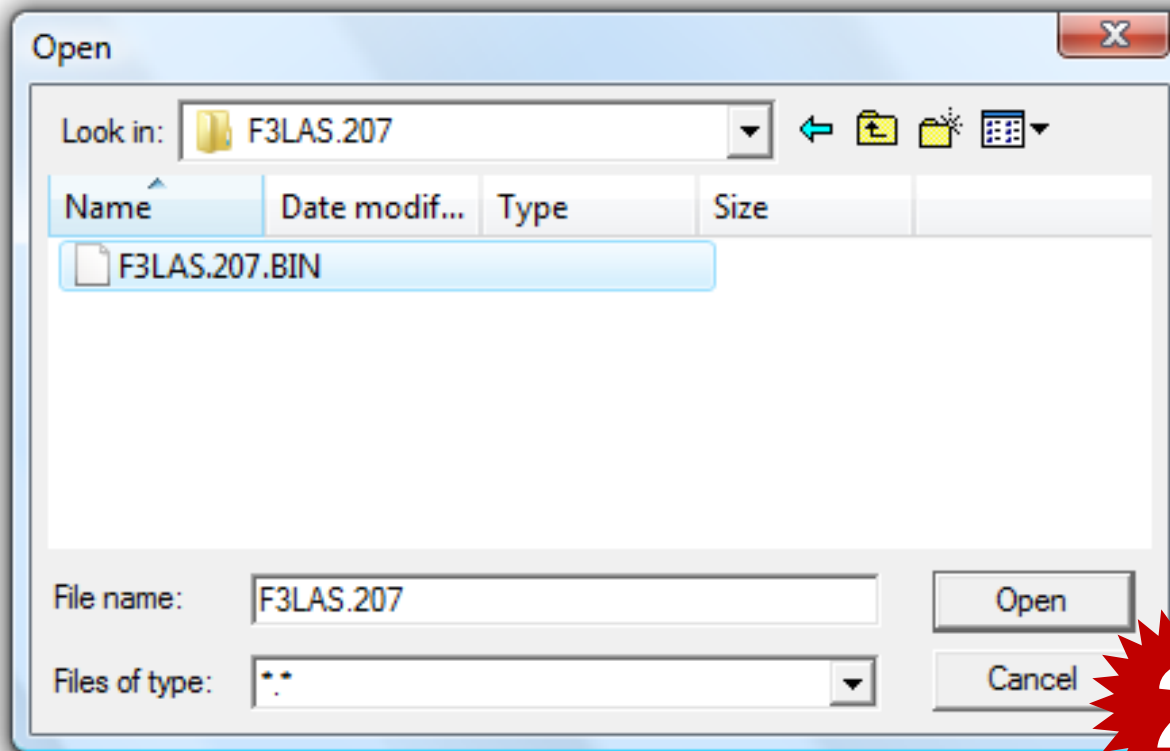
## 1. Open the program “Winflash”

Click **Start\All Programs\ASUS Utility\Winflash\Winflash V2.25**



# Flashing BIOS in Operating System

2. Select and open the BIOS files downloaded from the website.



# Flashing BIOS in Operating System

3. Confirm the BIOS information is correct and press “Flash” button to start.

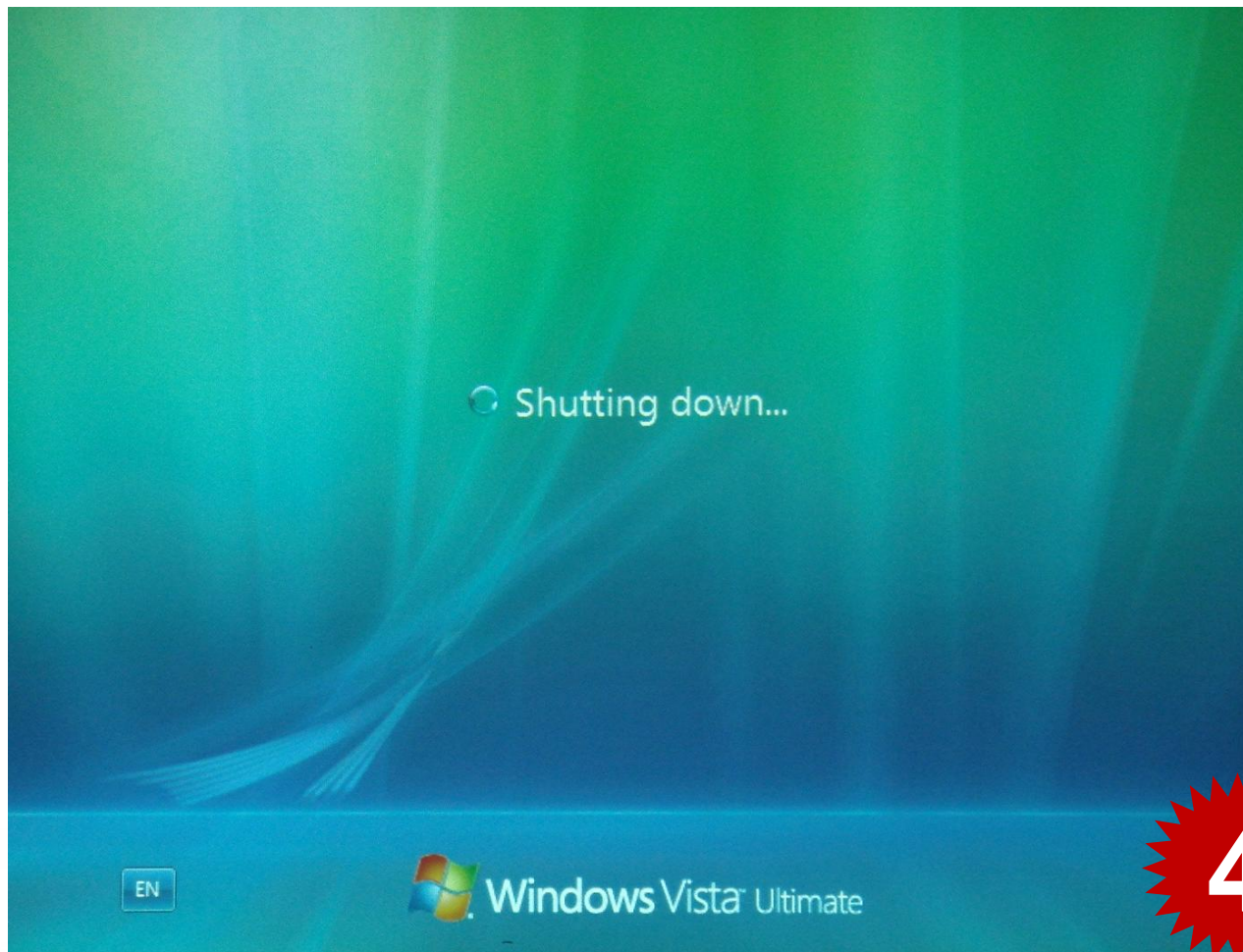
3





# Flashing BIOS in Operating System

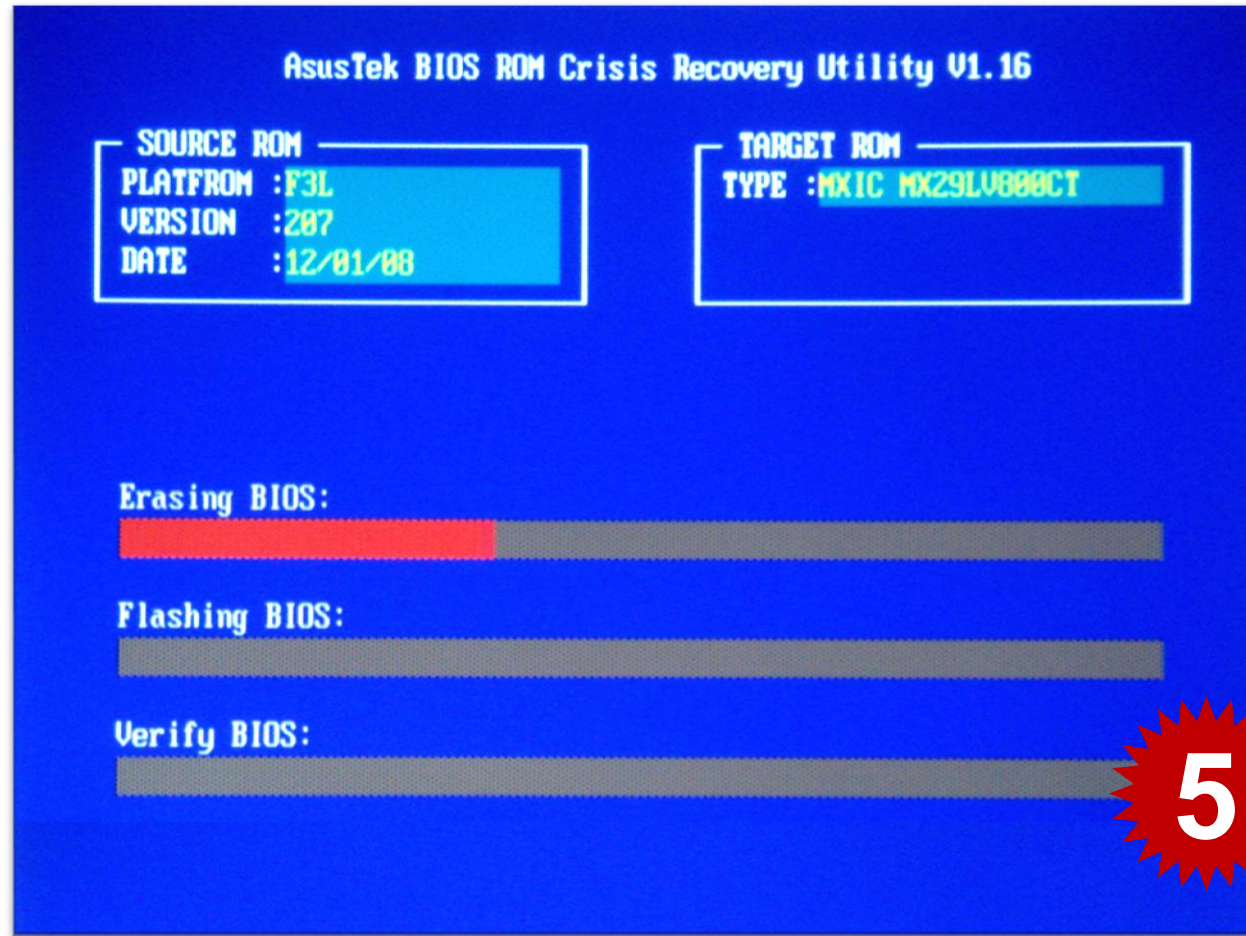
4. The system would shut down automatically and reboot again to enter the easy flash interface to start flashing the BIOS.





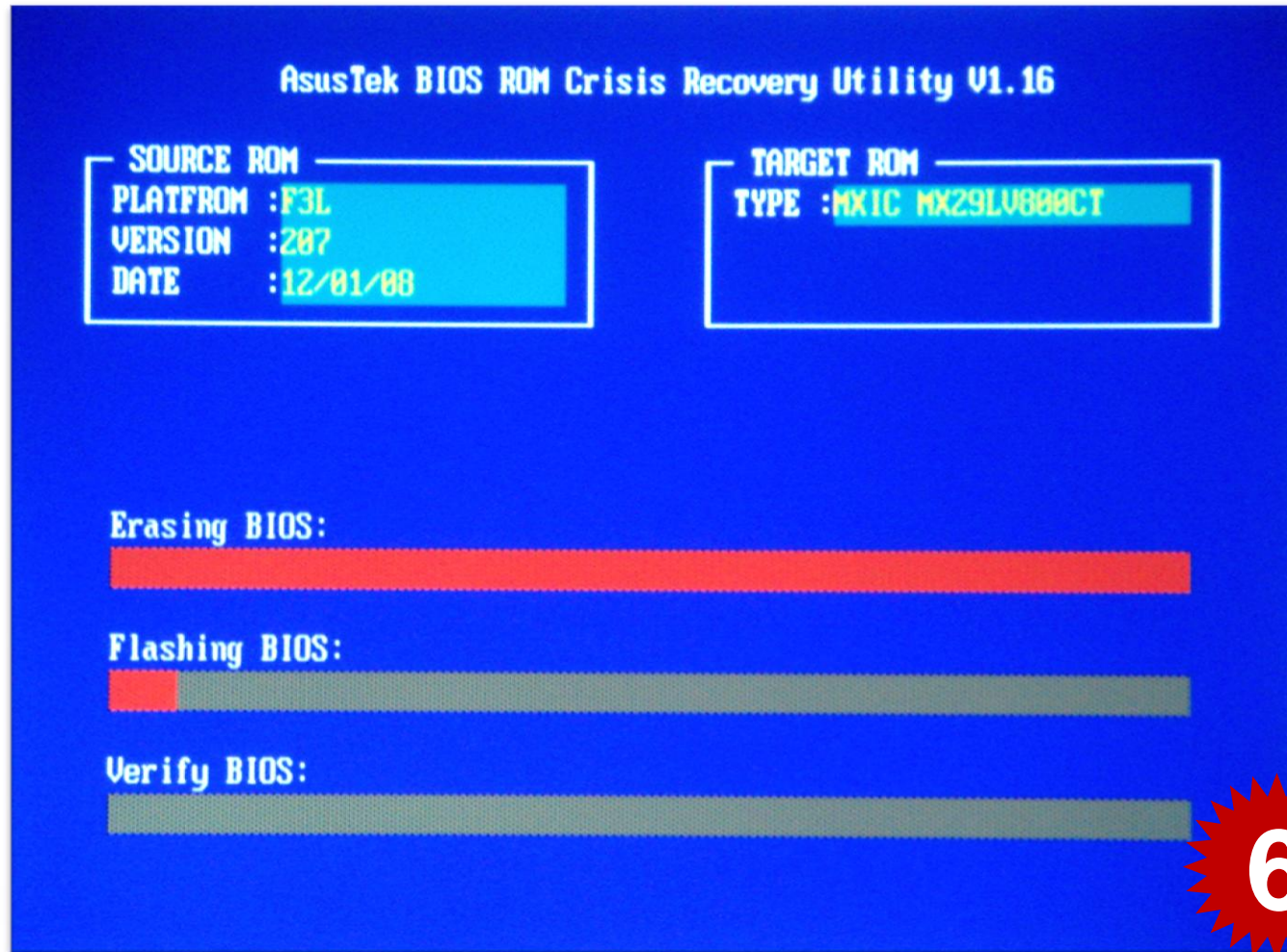
# Flashing BIOS in Operating System

## 5. Erasing BIOS



# Flashing BIOS in Operating System

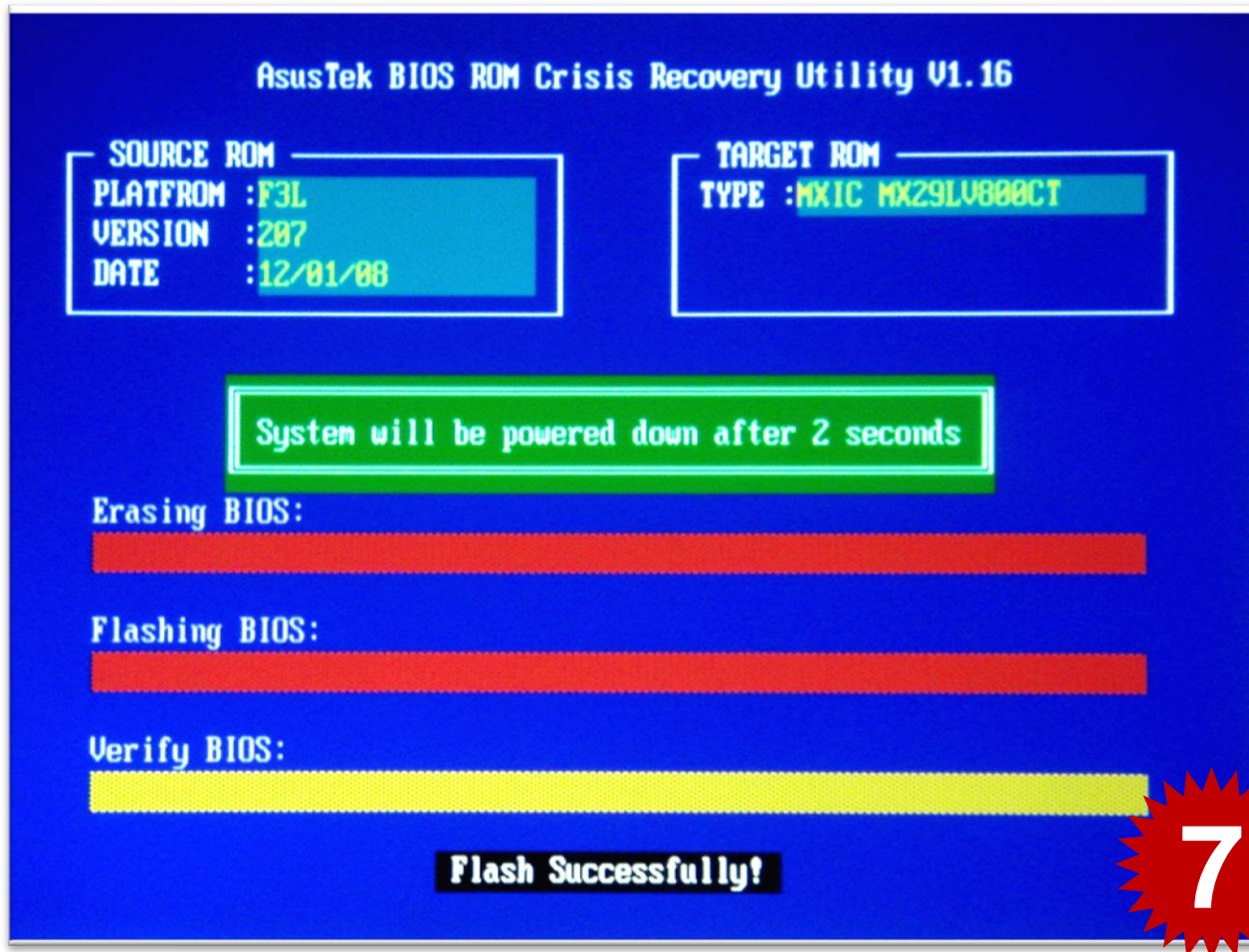
## 6. Flashing BIOS





# Flashing BIOS in Operating System

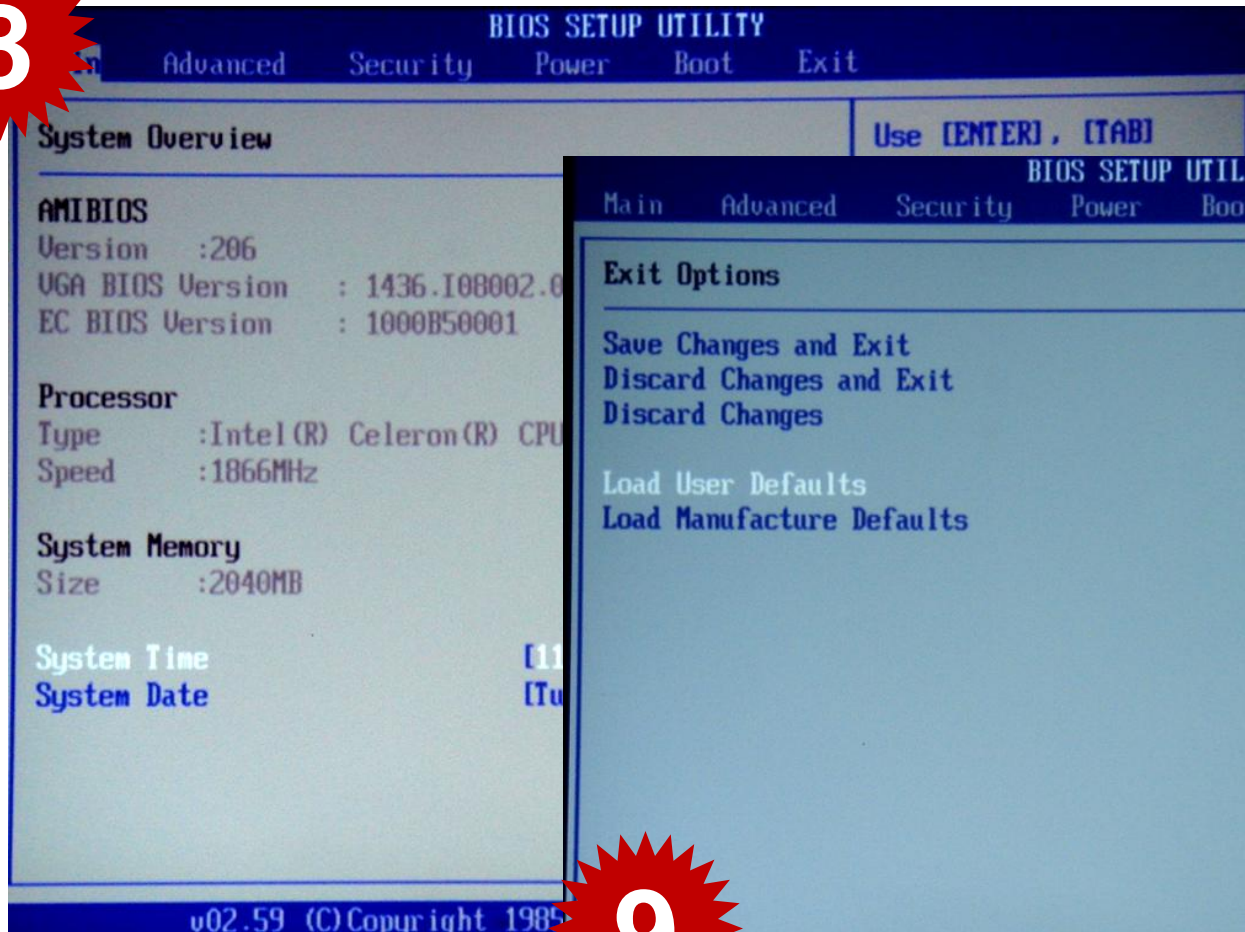
7. Verify BIOS. After flash successfully, the system would shut down automatically.



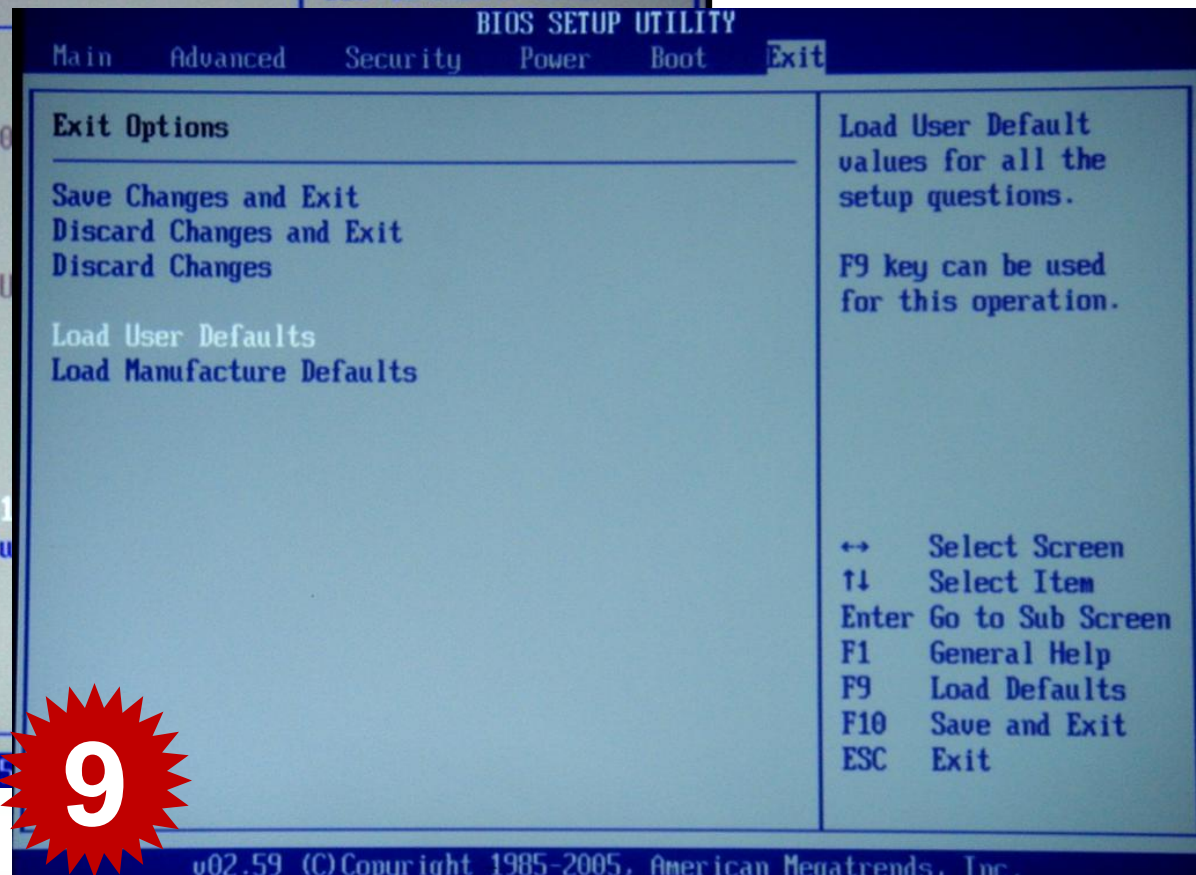
# Flashing BIOS in Operating System

8. Please restart and enter the BIOS setup interface to **Load User Defaults**.

8



9





# Warning



- The model is not matching
- The version is not the latest or older than the BIOS

In these two situations, the BIOS could not be updated. The message would show and the “Flash” button would not be activable.



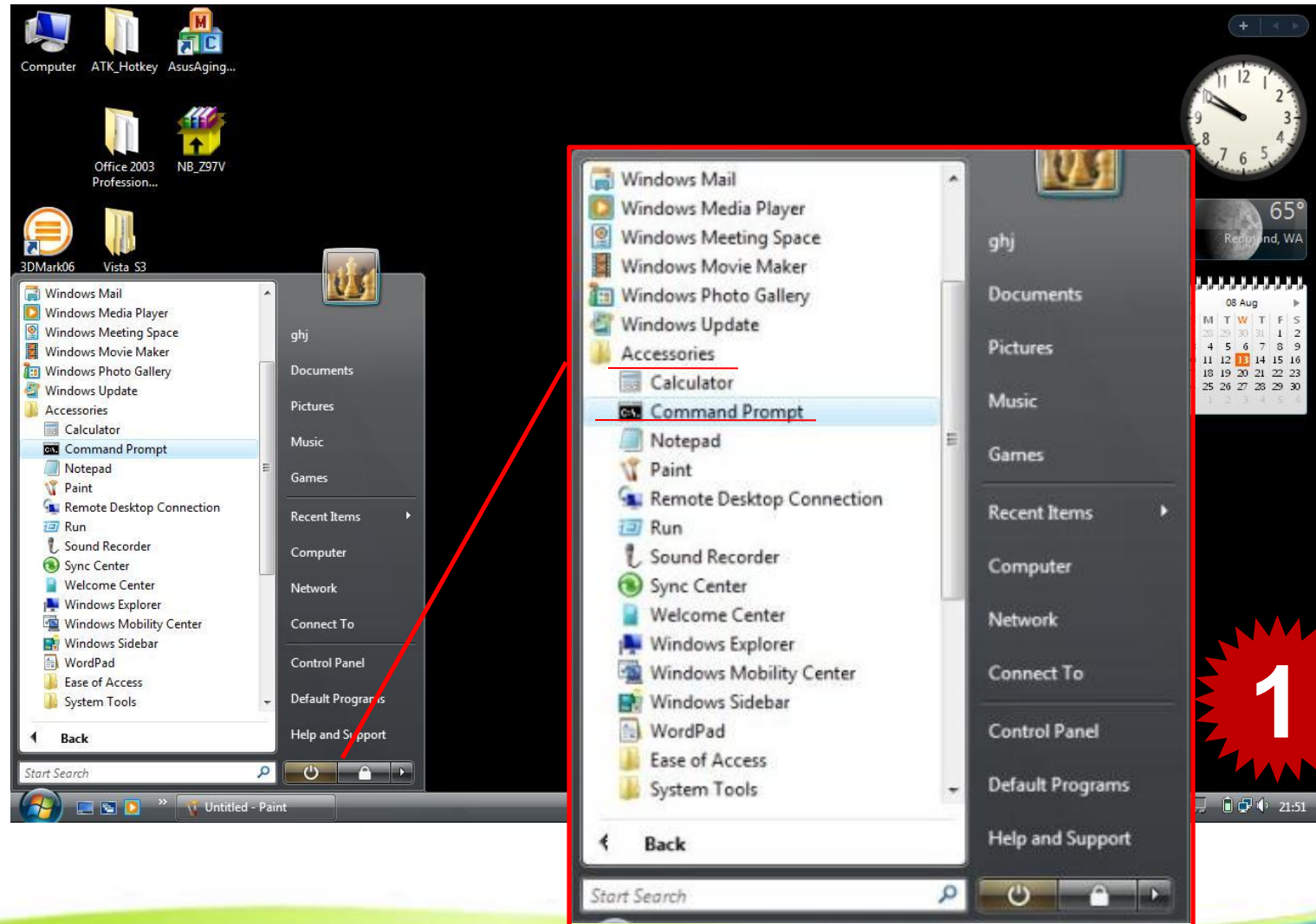
# Downgrade BIOS

**Description:**

With the new version of the BIOS, some functions would be disabled. In this case, downgrade BIOS would be adapted. For the WINFLASH program could only upgrade BIOS, one command should be run before the downgrade.

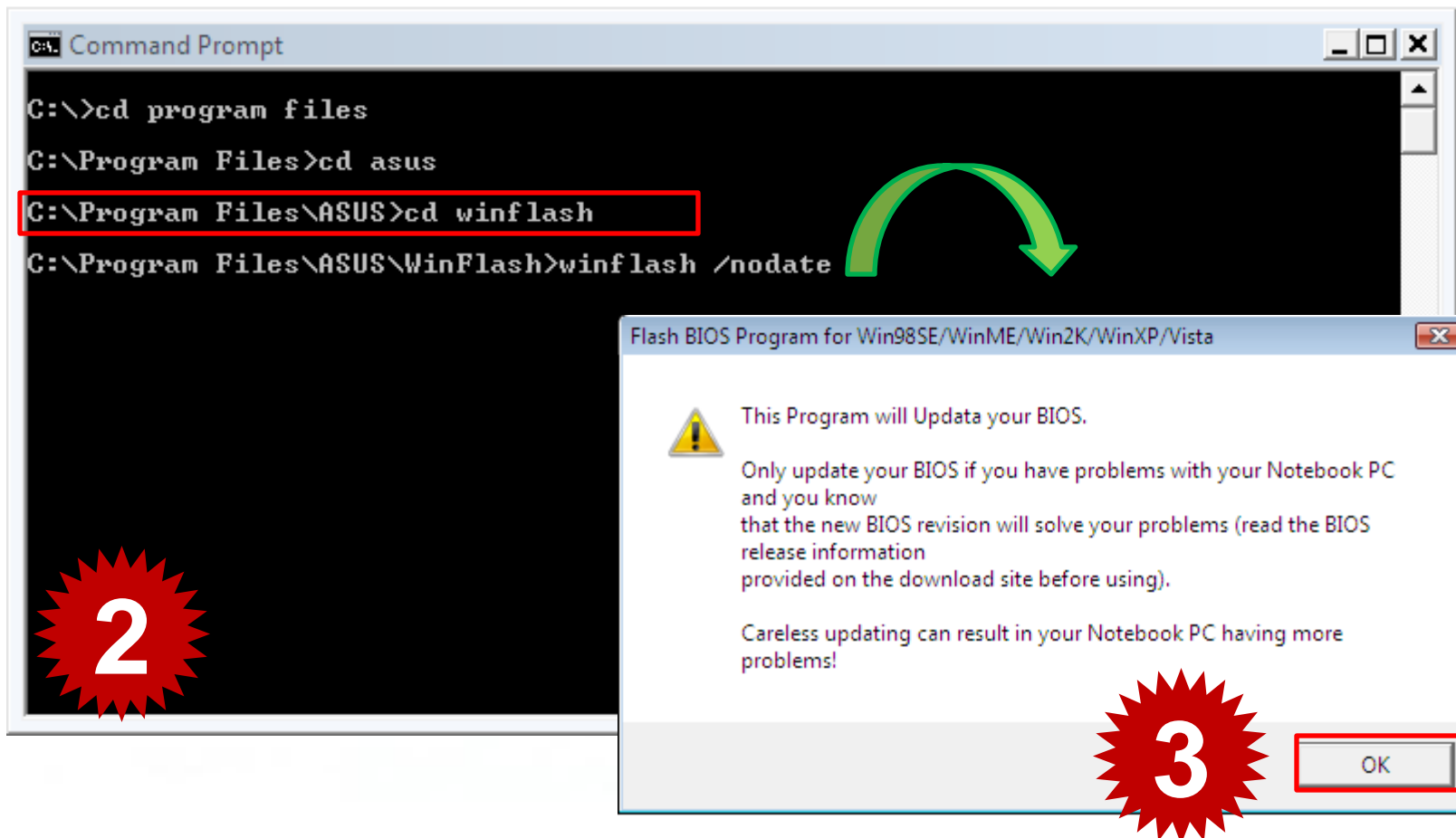
# Downgrade BIOS

## 1. Enter into the DOS mode in OS



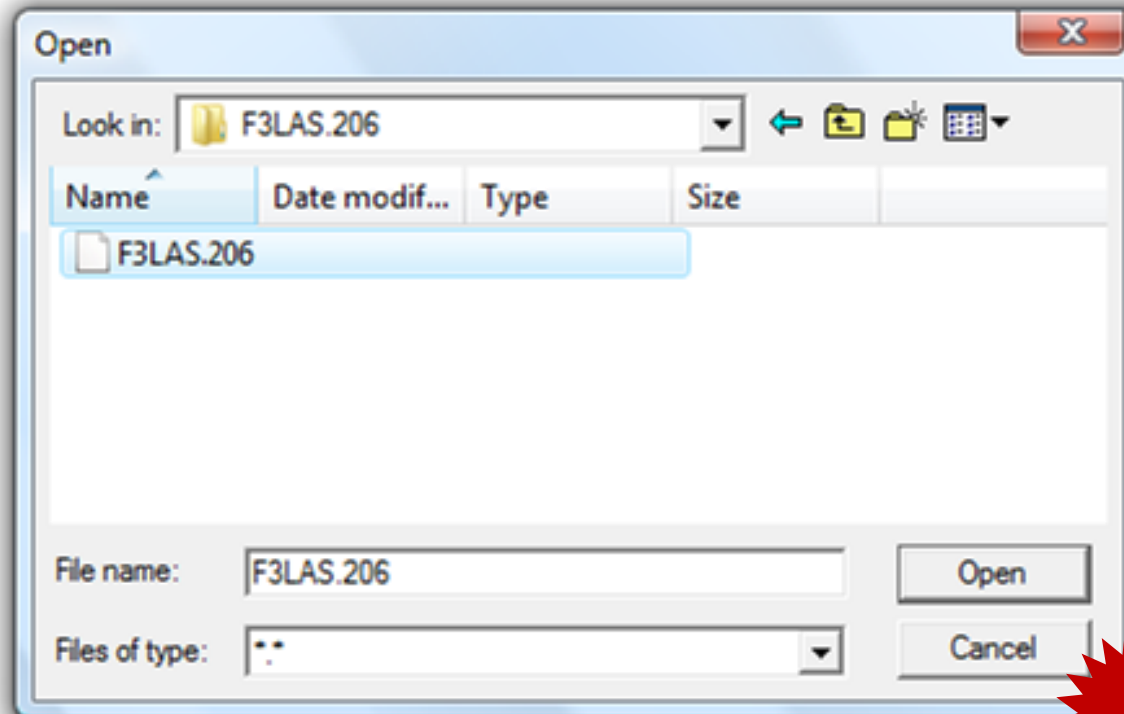
# Downgrade BIOS

2. Run "winflash /nodate" in the DOS mode  
(The path is as below)



# Downgrade BIOS

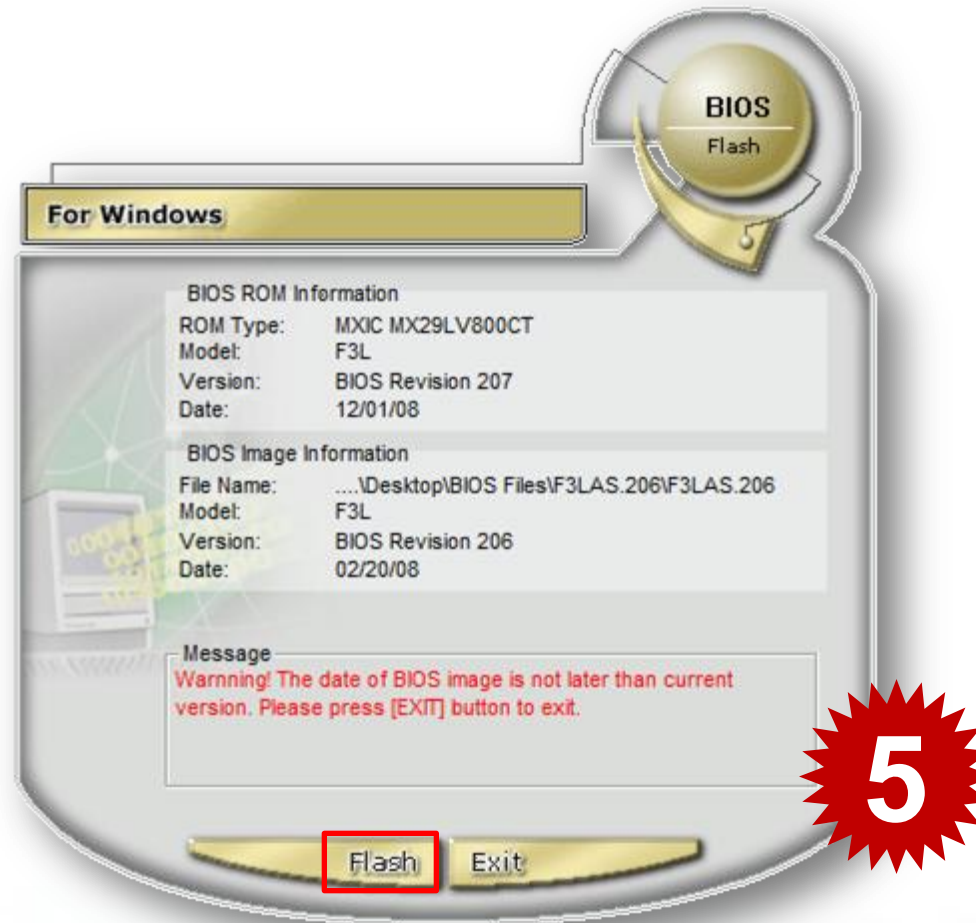
3. Choose the BIOS image file.



4

# Downgrade BIOS

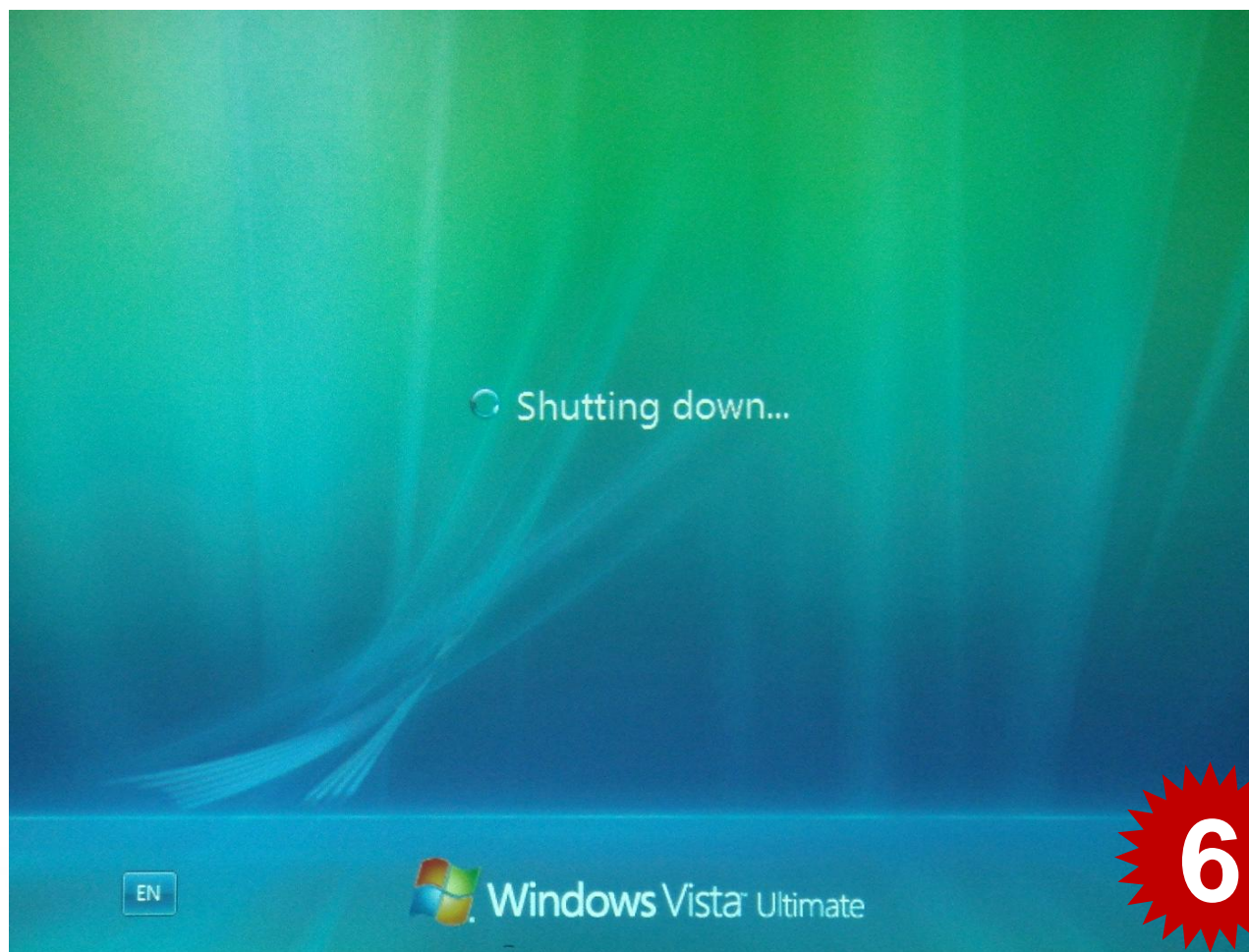
4. Start to Downgrade.





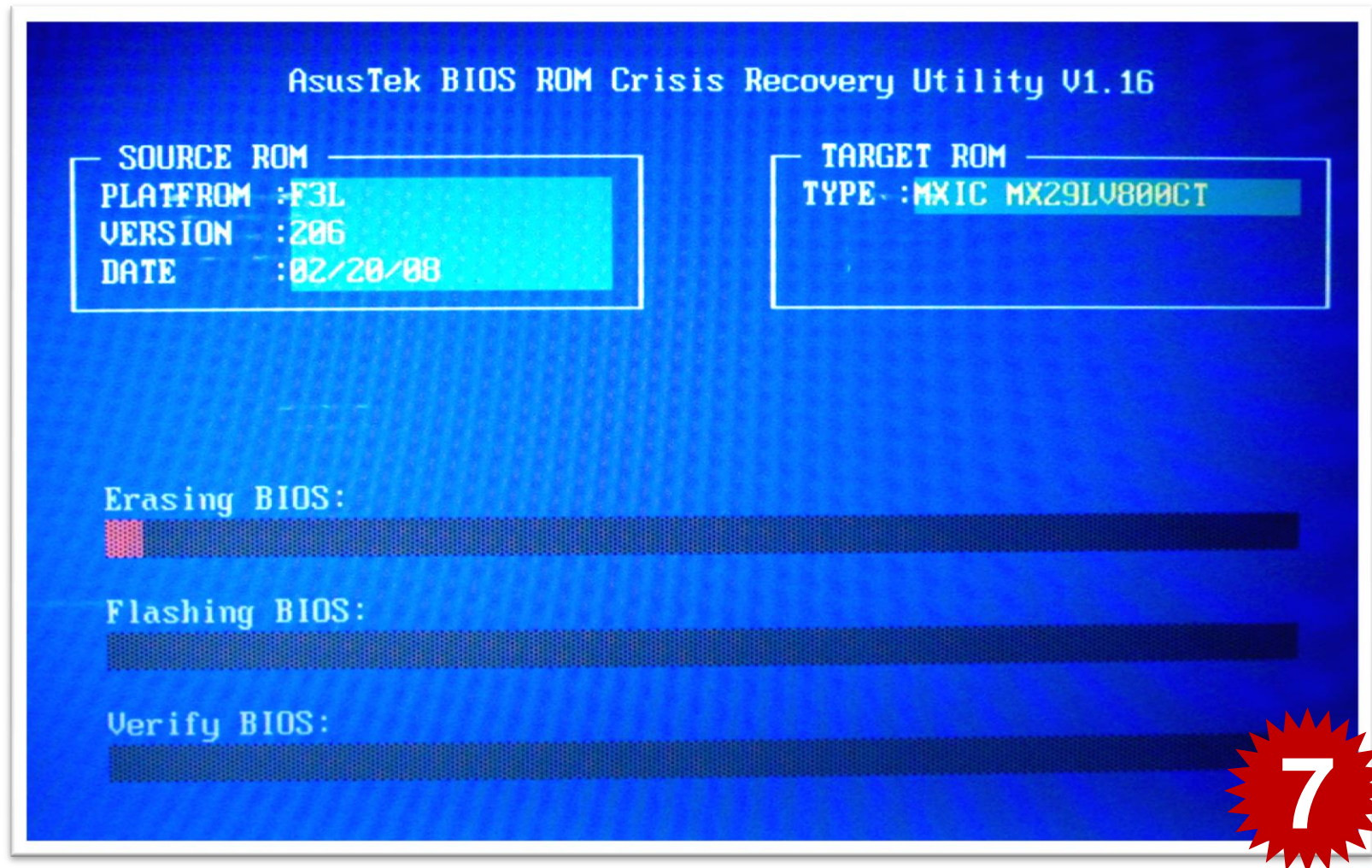
# Downgrade BIOS

5. The system would shut down automatically and reboot again to enter the easy flash interface to start flash the BIOS.



# Downgrade BIOS

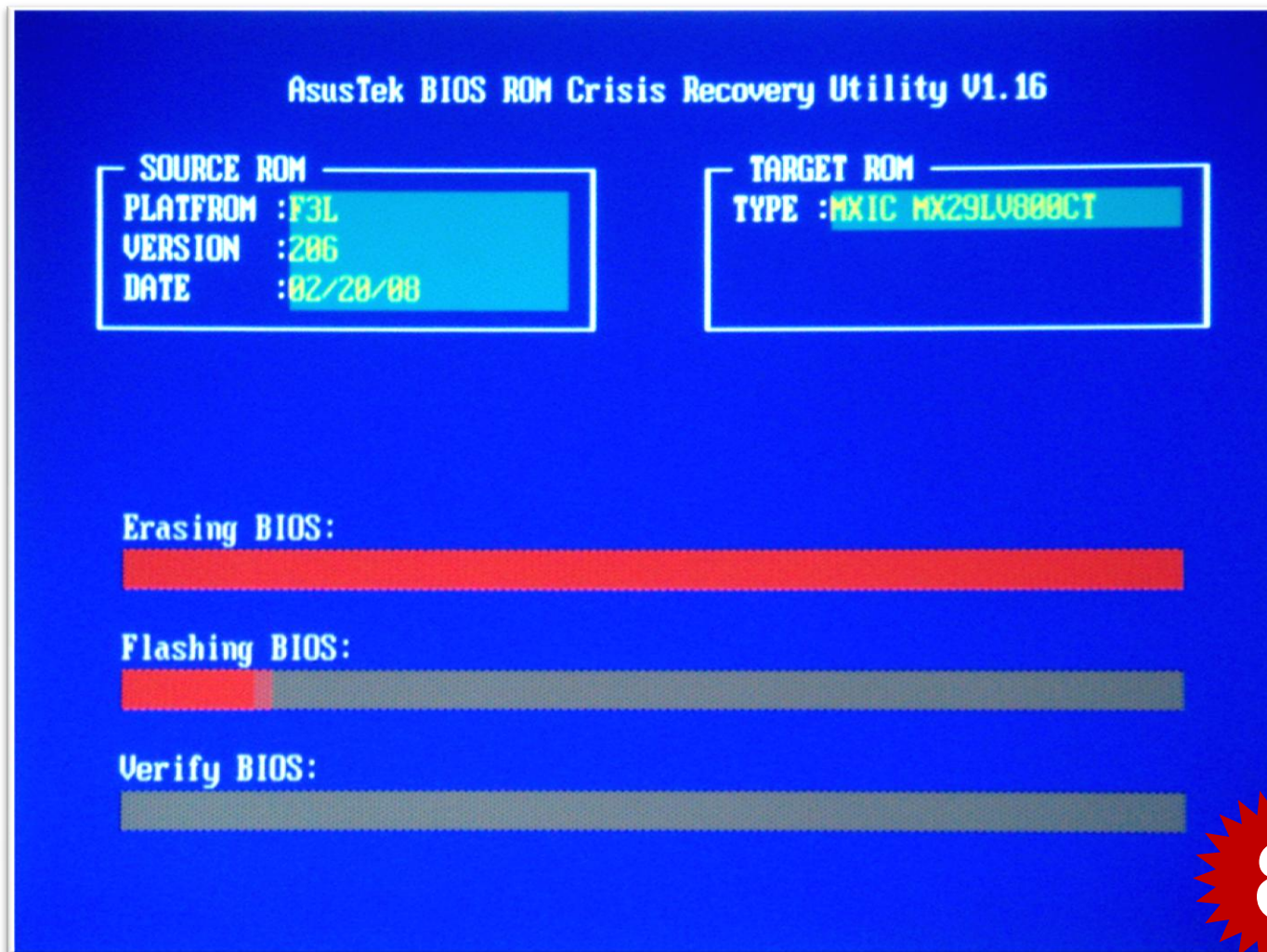
## 6. Erasing BIOS





# Downgrade BIOS

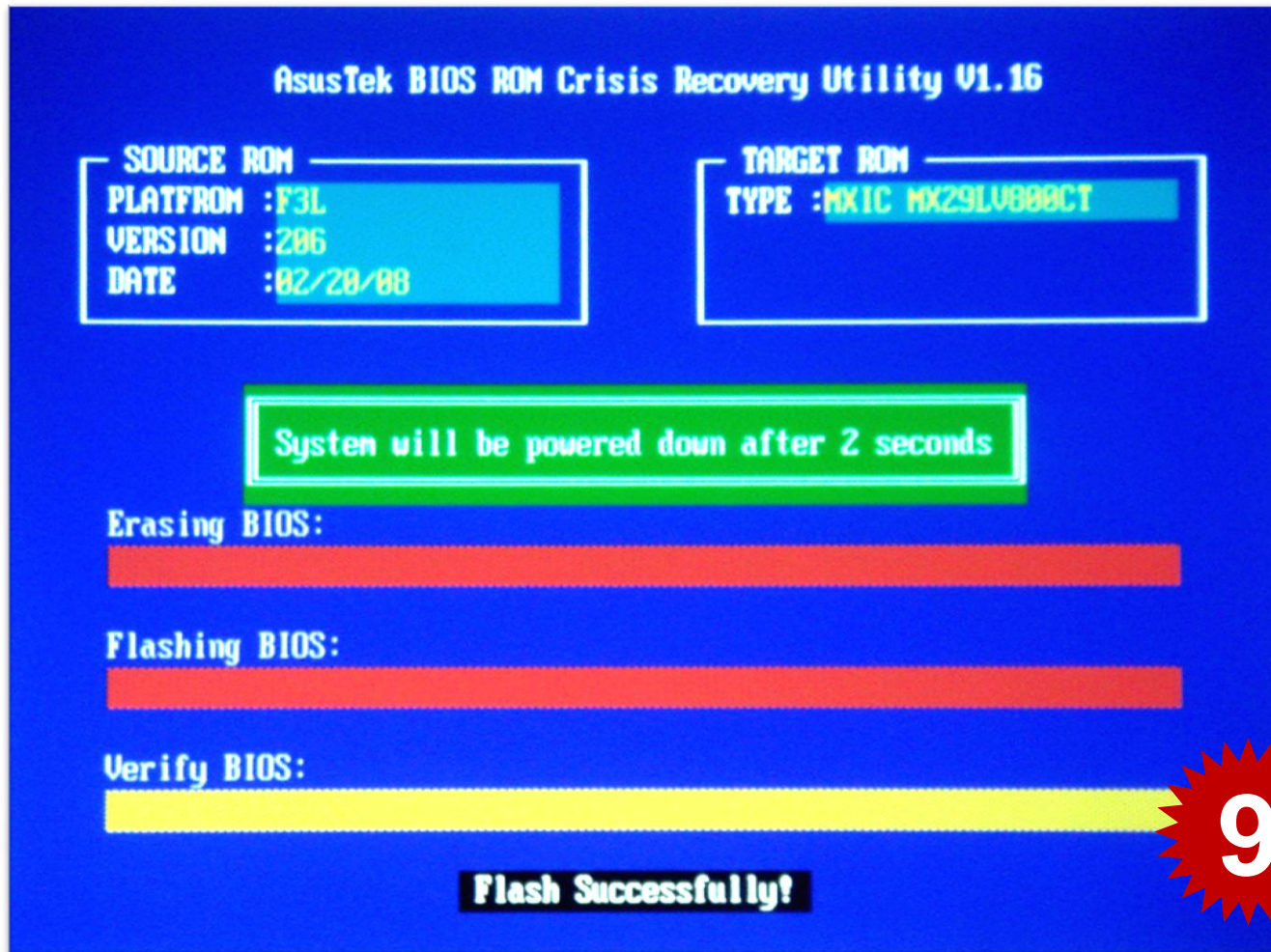
## 7. Flashing BIOS



8

# Downgrade BIOS

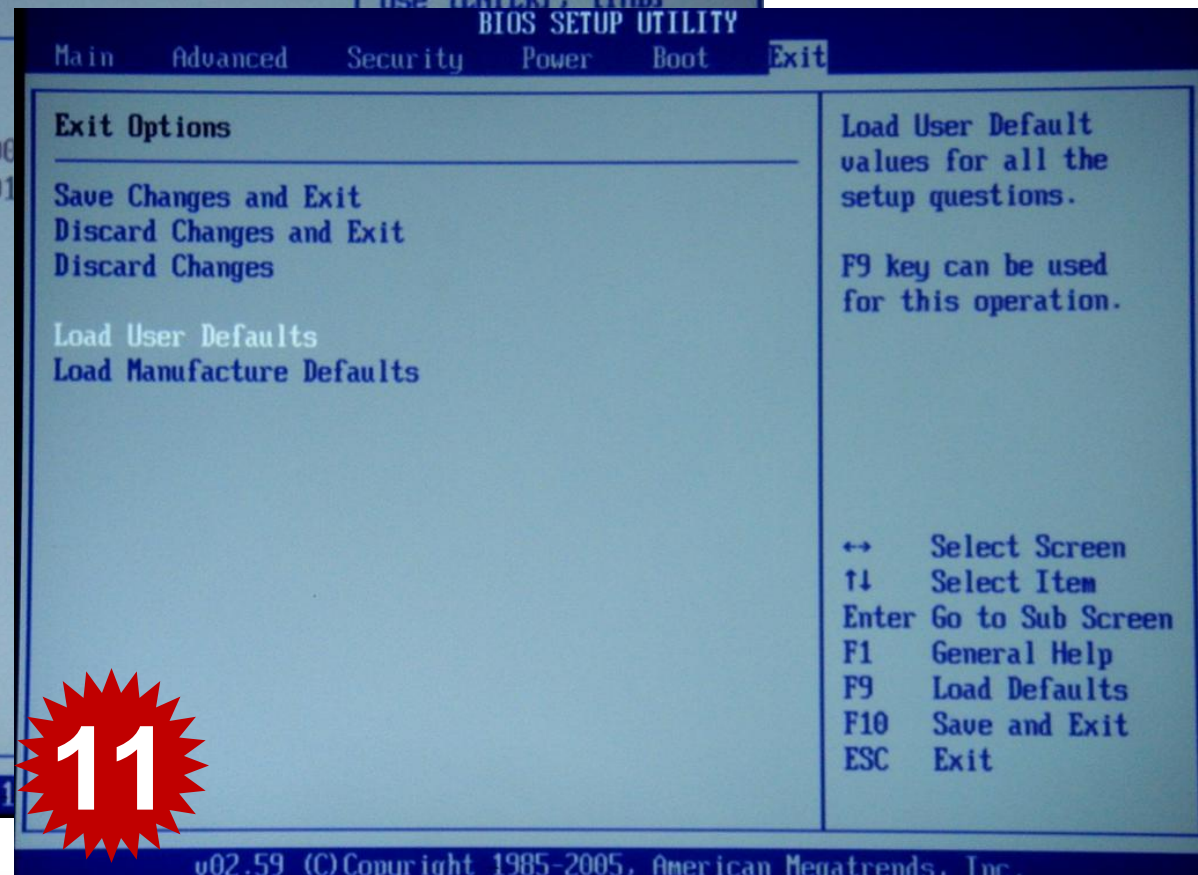
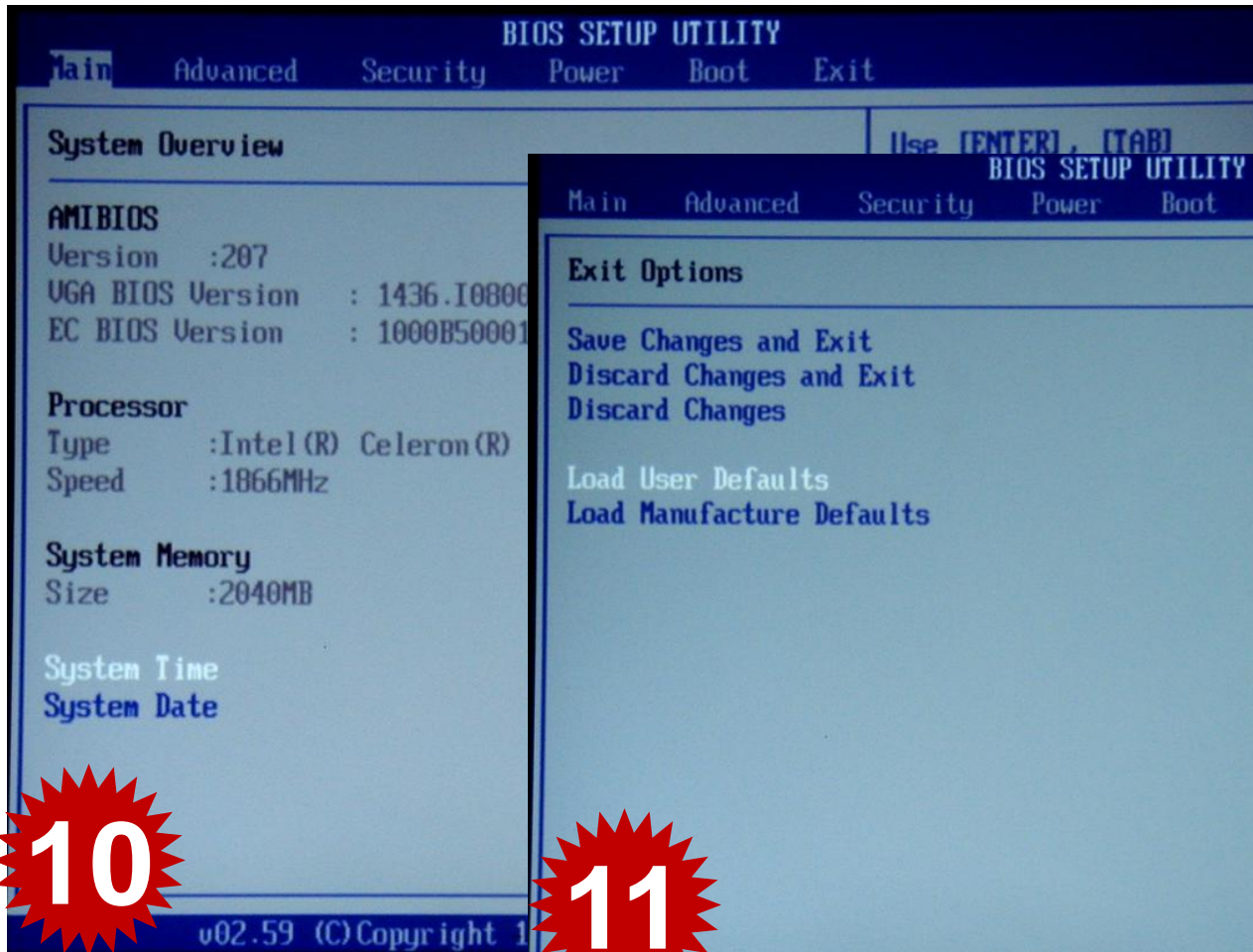
8. Verify BIOS. After flash successfully, the system would shut down automatically.





# Downgrade BIOS

9. Please restart and enter the BIOS setup interface to **Load User Defaults**.





# Flashing BIOS in NBDOS

# Preparation

- Download the BIOS image files from the **SIP** website (As it mentioned in the flashing BIOS in OS)
- **Prepare a USB DOS booting flash disk with the “AFLASH2.EXE” program and the BIOS image files in.**



# Flashing BIOS in NBDOS

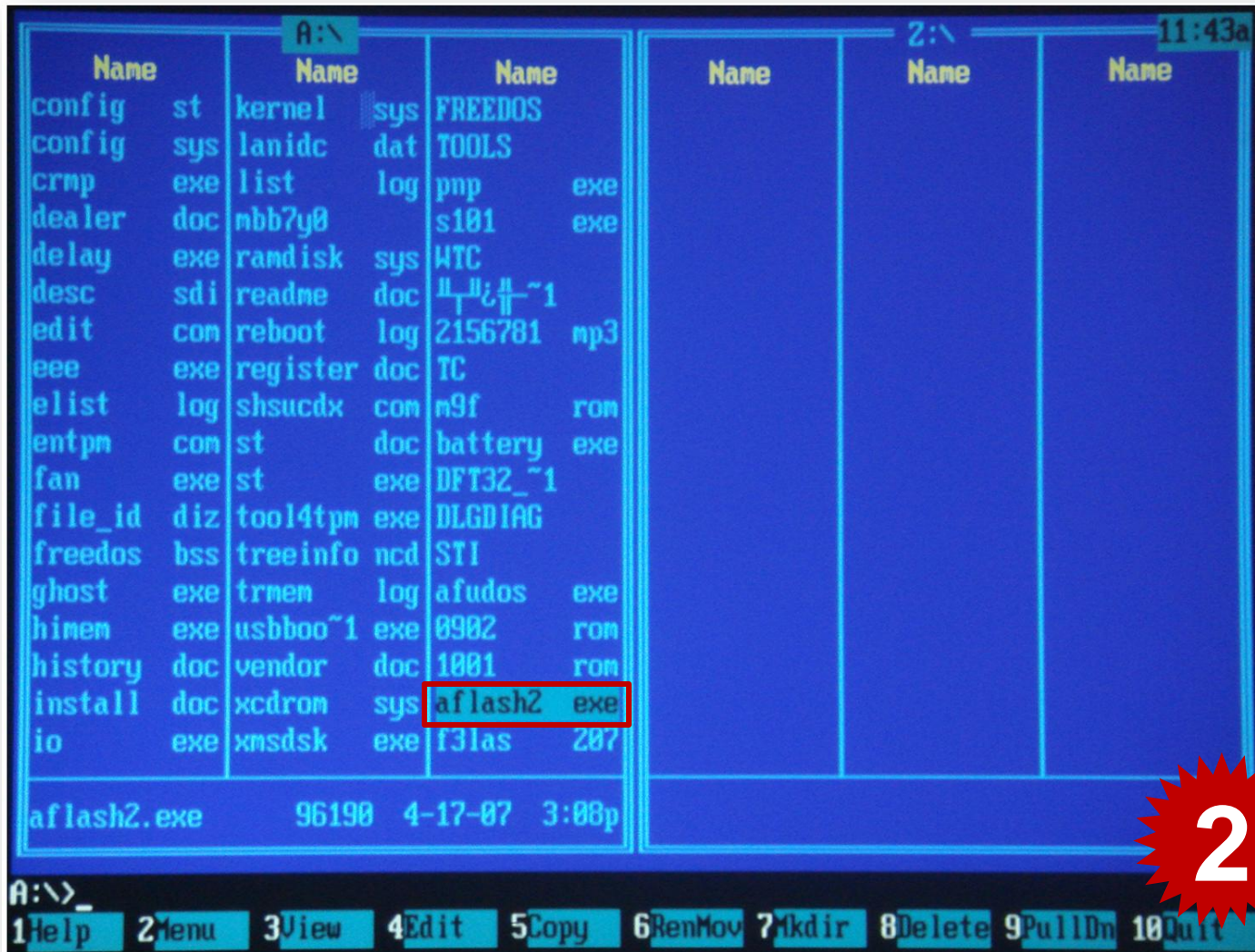
1. Booting from the USB to enter into the NBDOS



1

# Flashing BIOS in NBDOS

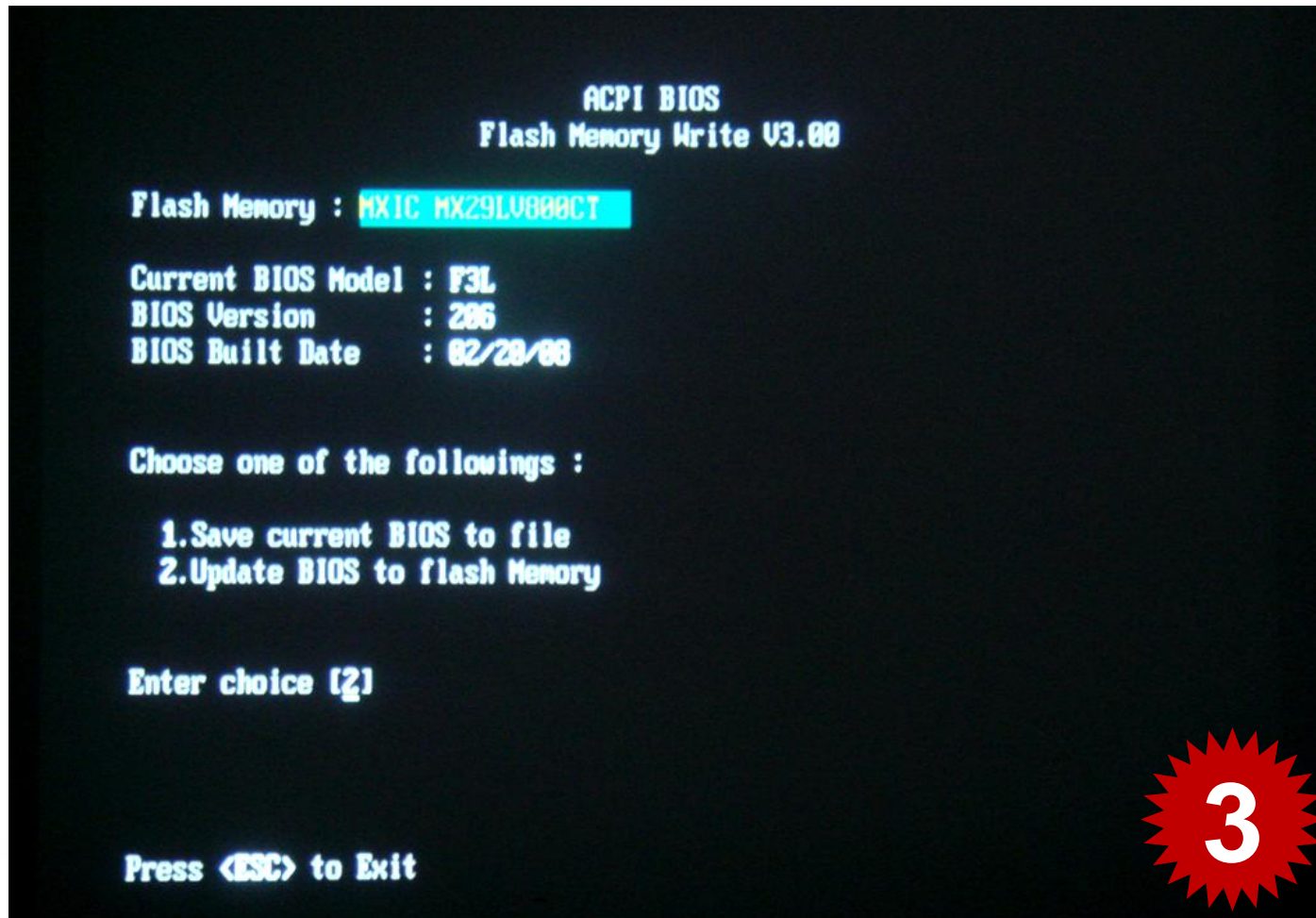
2. Select aflash2.exe to run updating BIOS program





# Flashing BIOS in NBDOS

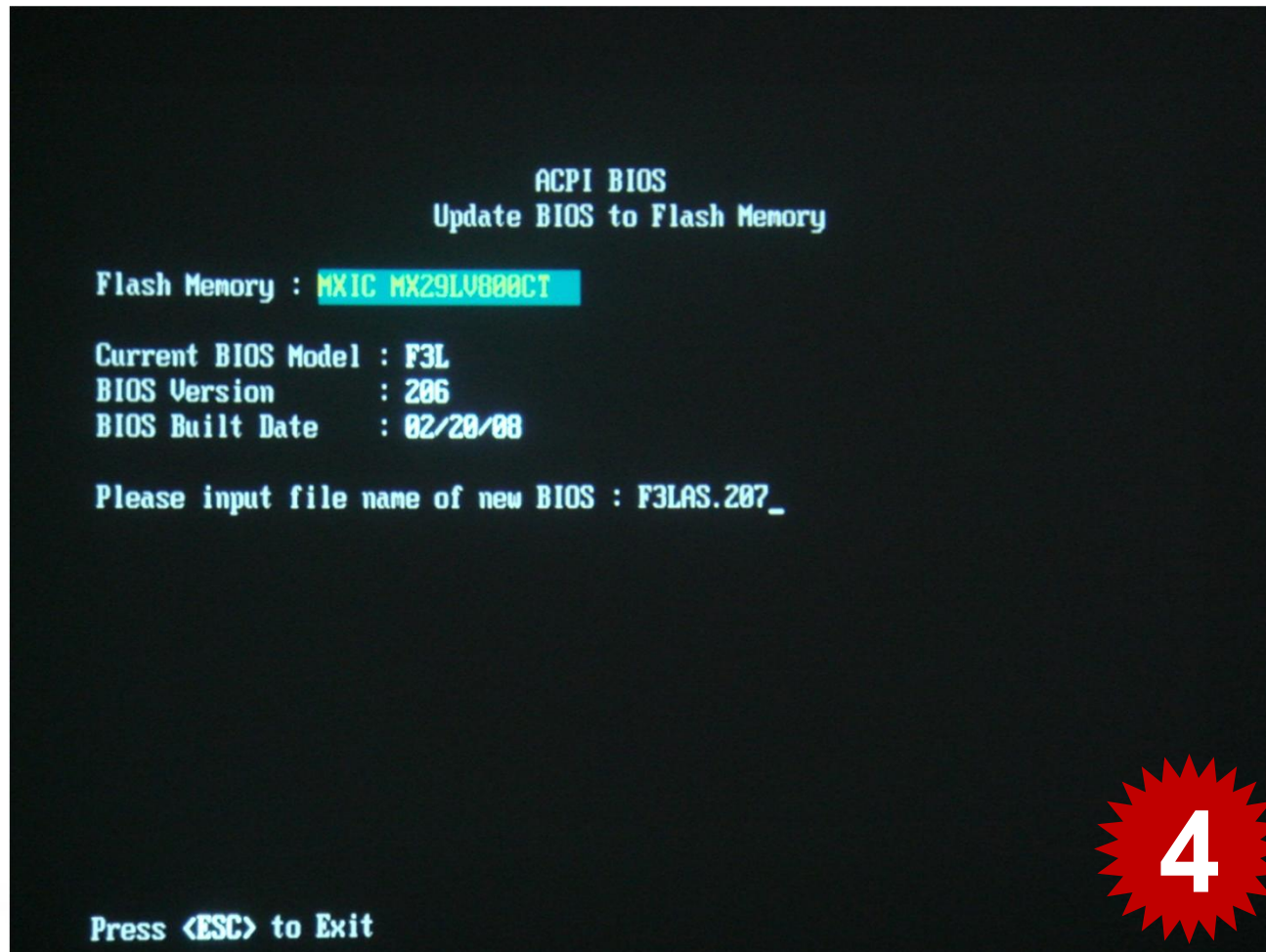
3. Select <2.update BIOS to new version>





# Flashing BIOS in NBDOS

## 4. Input file name of new BIOS



# Flashing BIOS in NBDOS

## 5. Confirm the new BIOS name and make sure to start flashing

In this stage, please carefully check the model and version is correct then enter “Y” to continue, otherwise the system will flash a wrong BIOS which will cause the problem of no boot.

```
ACPI BIOS
Update BIOS to Flash Memory

BIOS Model:
[Current] F3L
[ Update] F3L

BIOS Version:
[Current] 206
[ Update] 207

Date of BIOS Built:
[Current] 02/20/00
[ Update] 12/01/00

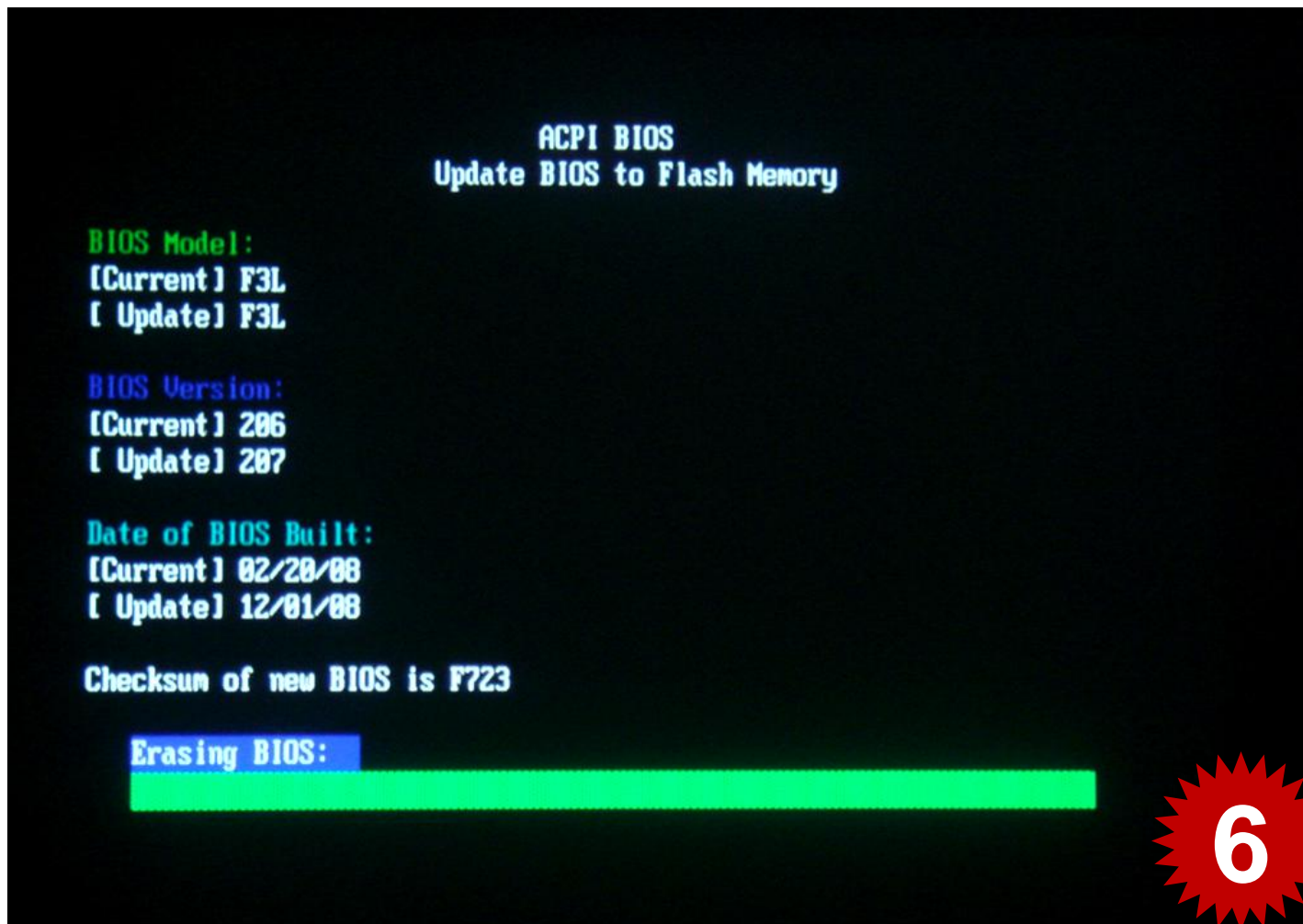
Checksum of new BIOS is F723

Are you sure to replace BIOS? (Y/N):[ ]
Press <ESC> to Exit
```

5

# Flashing BIOS in NBDOS

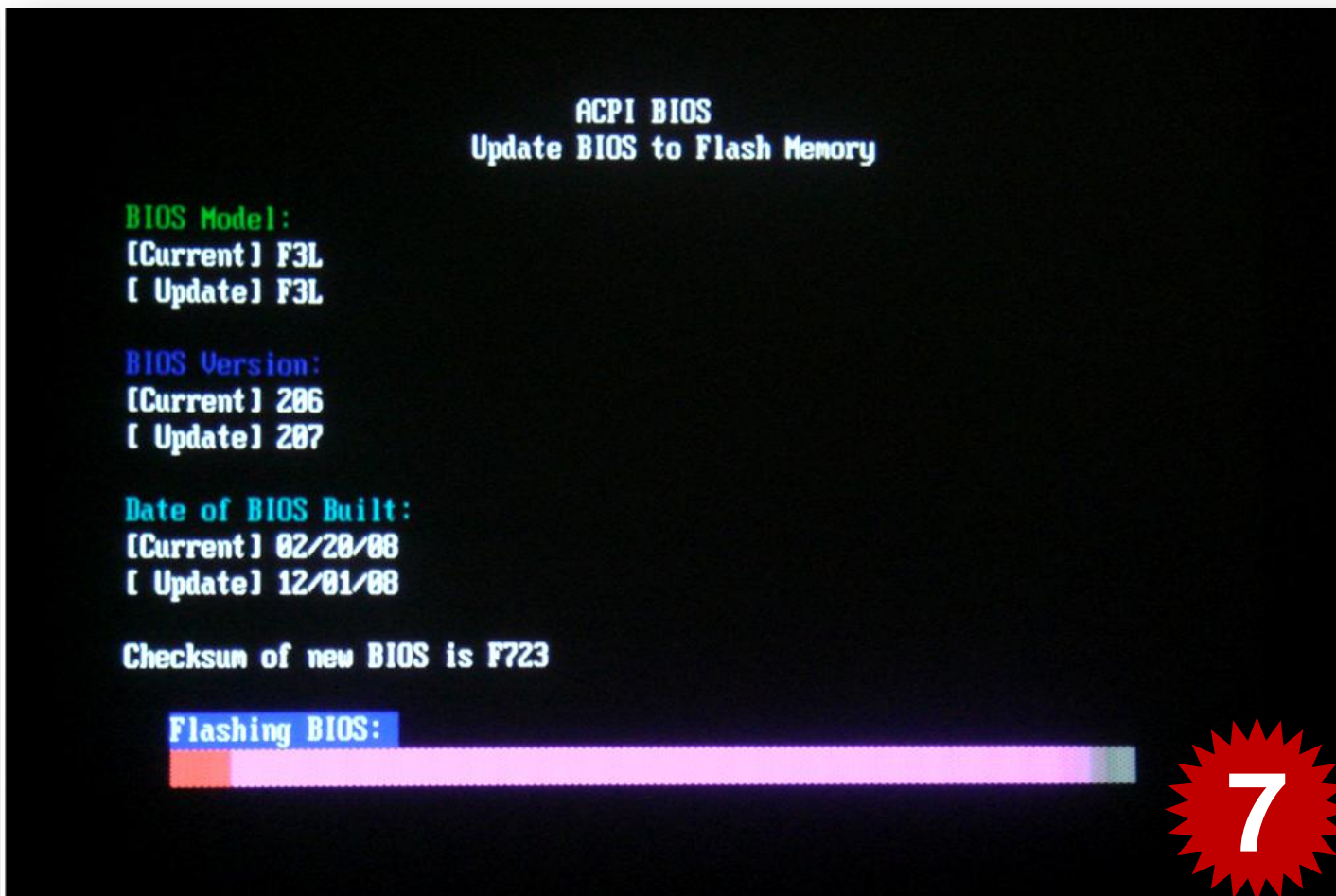
## 6. Erasing BIOS





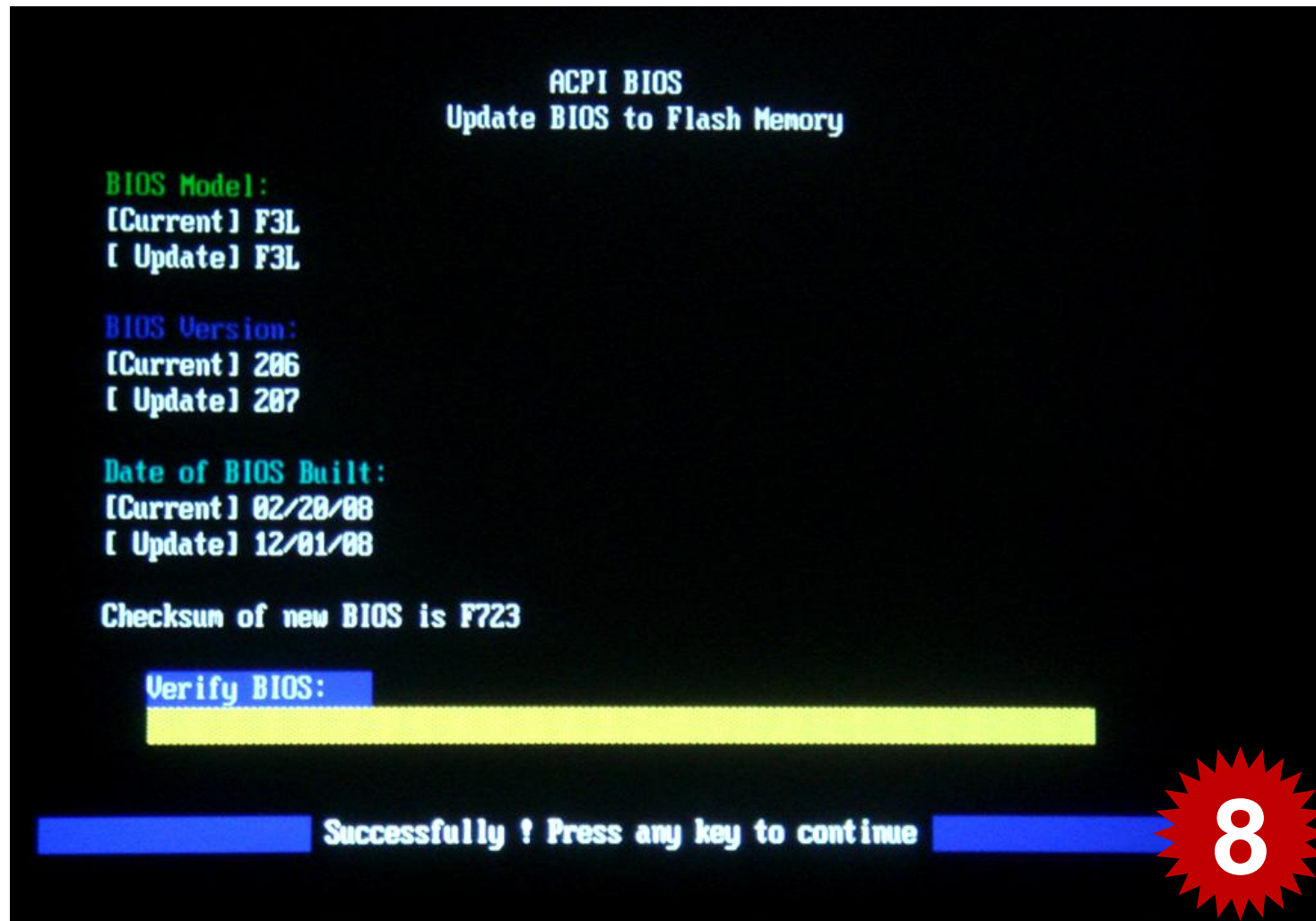
# Flashing BIOS in NBDOS

## 7. Flashing BIOS



# Flashing BIOS in NBDOS

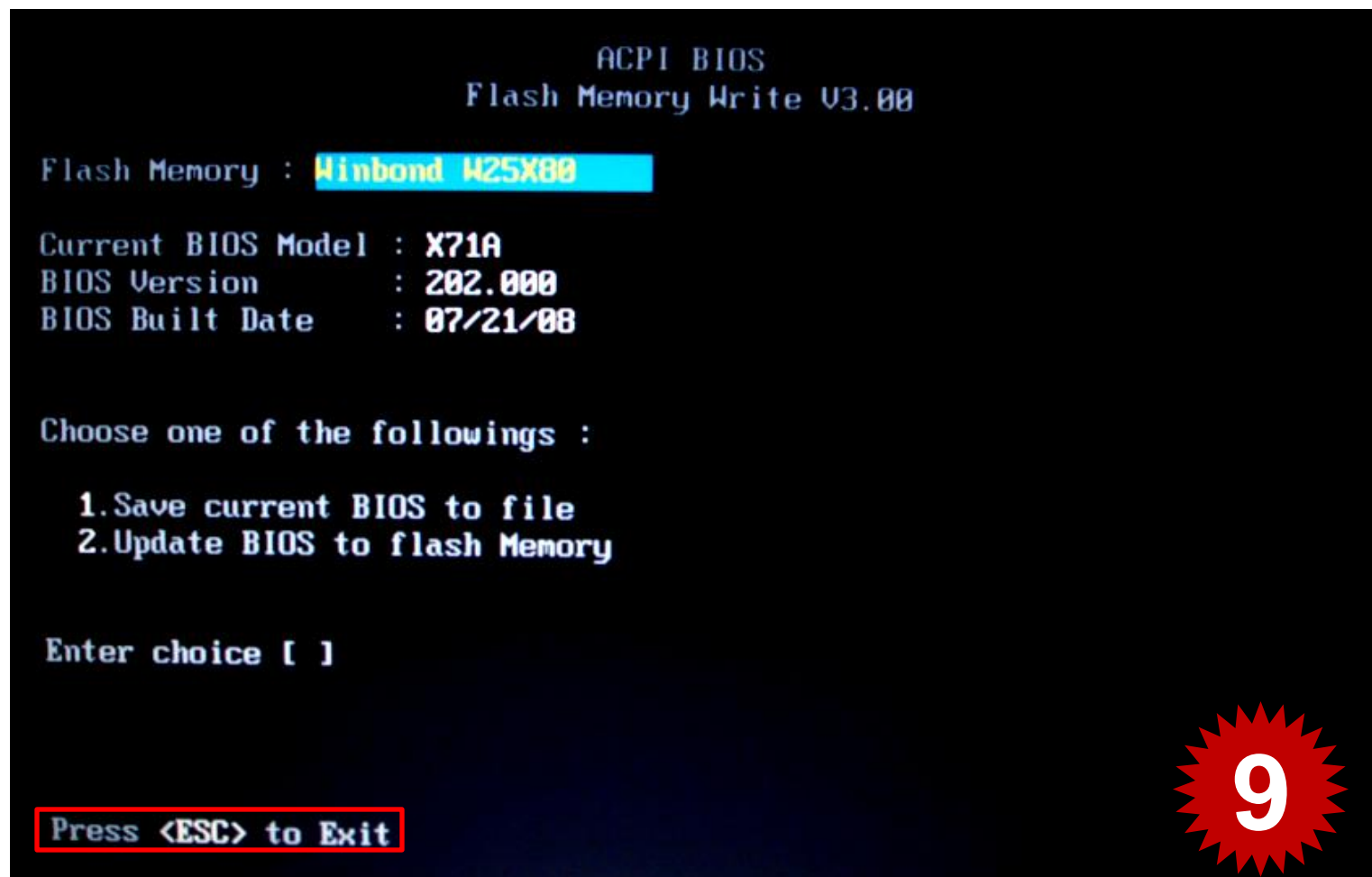
## 8. Verify BIOS





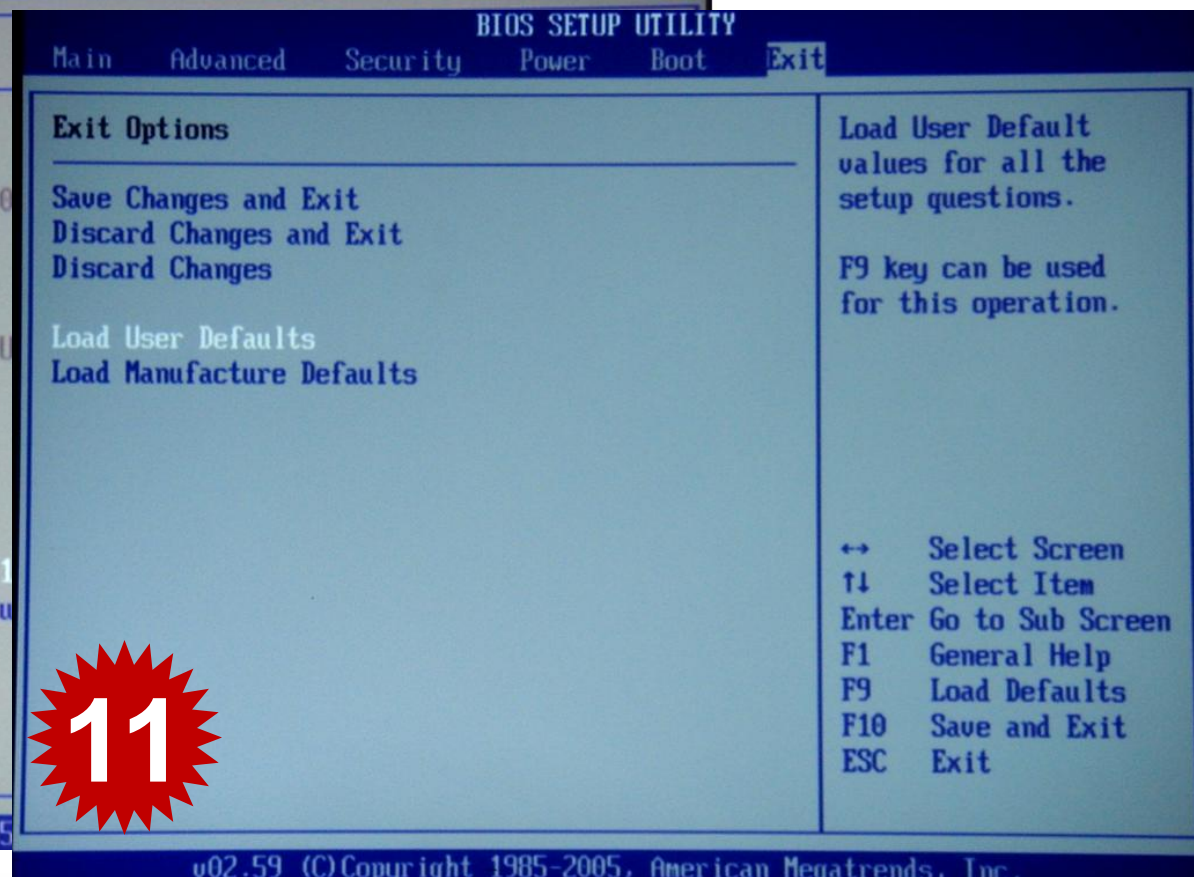
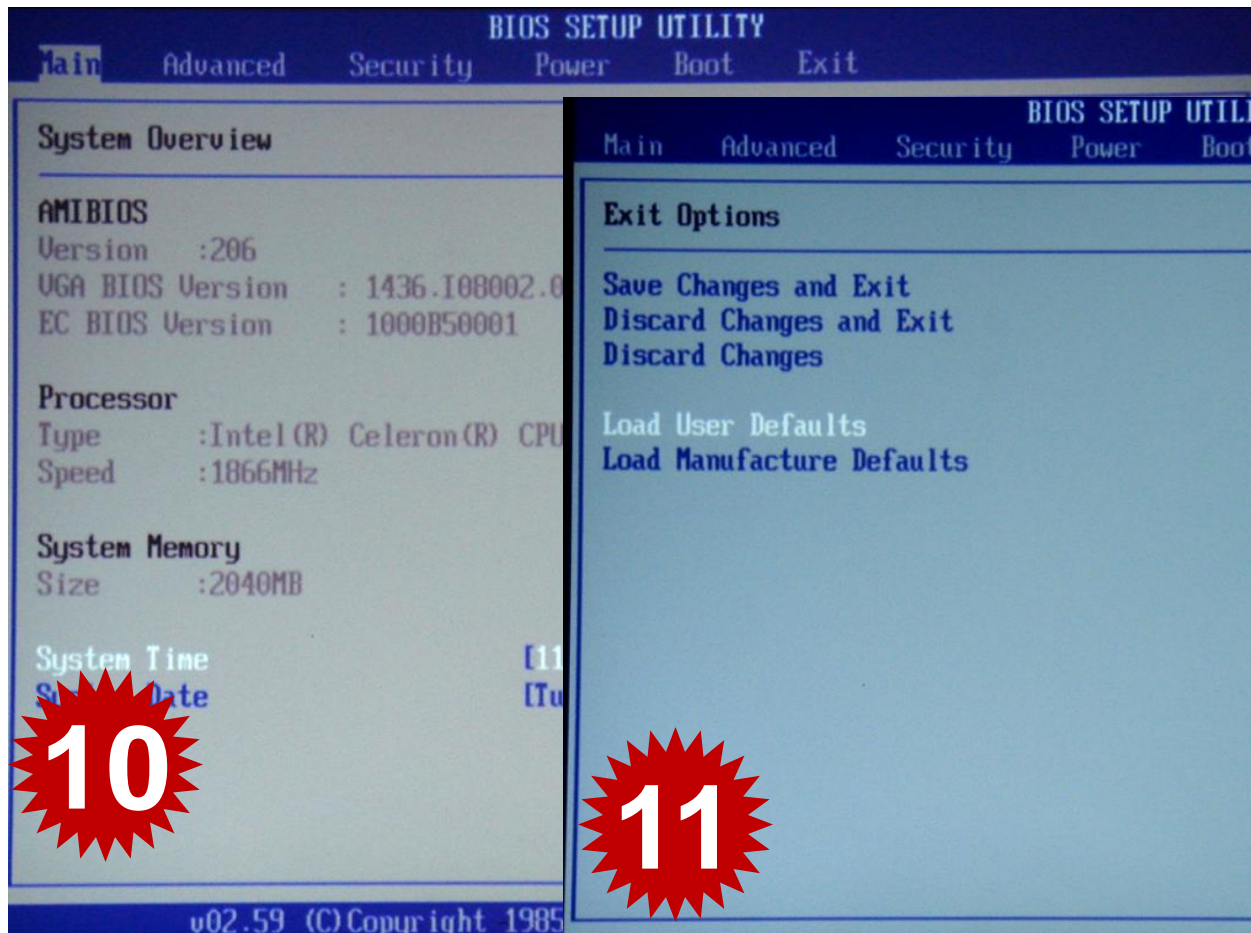
# Flashing BIOS in NBDOS

## 9. Complete Flashing and EXIT



# Flashing BIOS in NBDOS

10. Restart the PC and enter into the BIOS SETUP UTILITY to check the BIOS info.



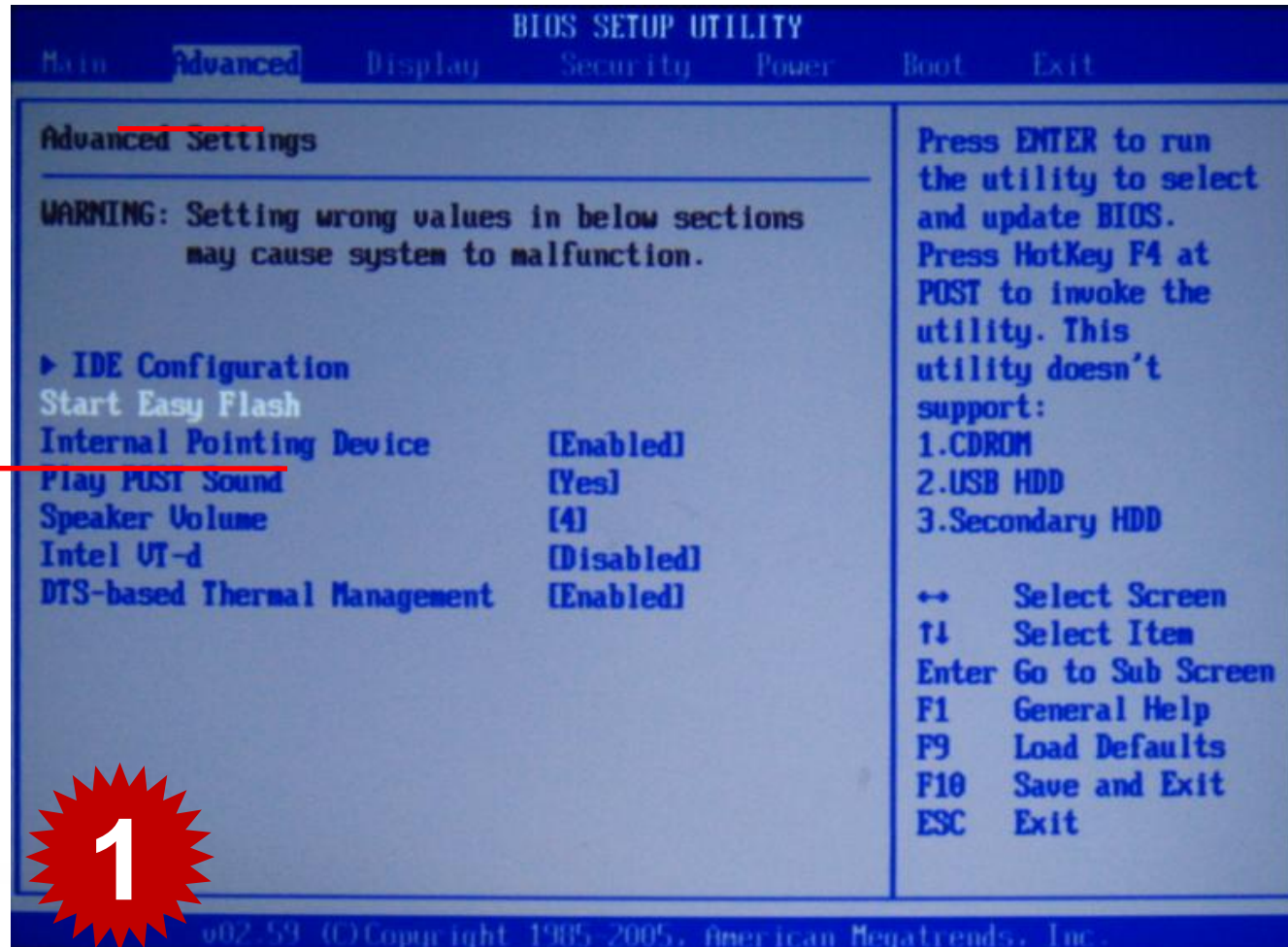
# Flashing BIOS in BIOS SETUP UTILITY

**Description:**

For the computer with the Napa platform and the latter one, BIOS updating could be completed directly in the BIOS setup interface.

# Flashing BIOS in BIOS SET UTILITY

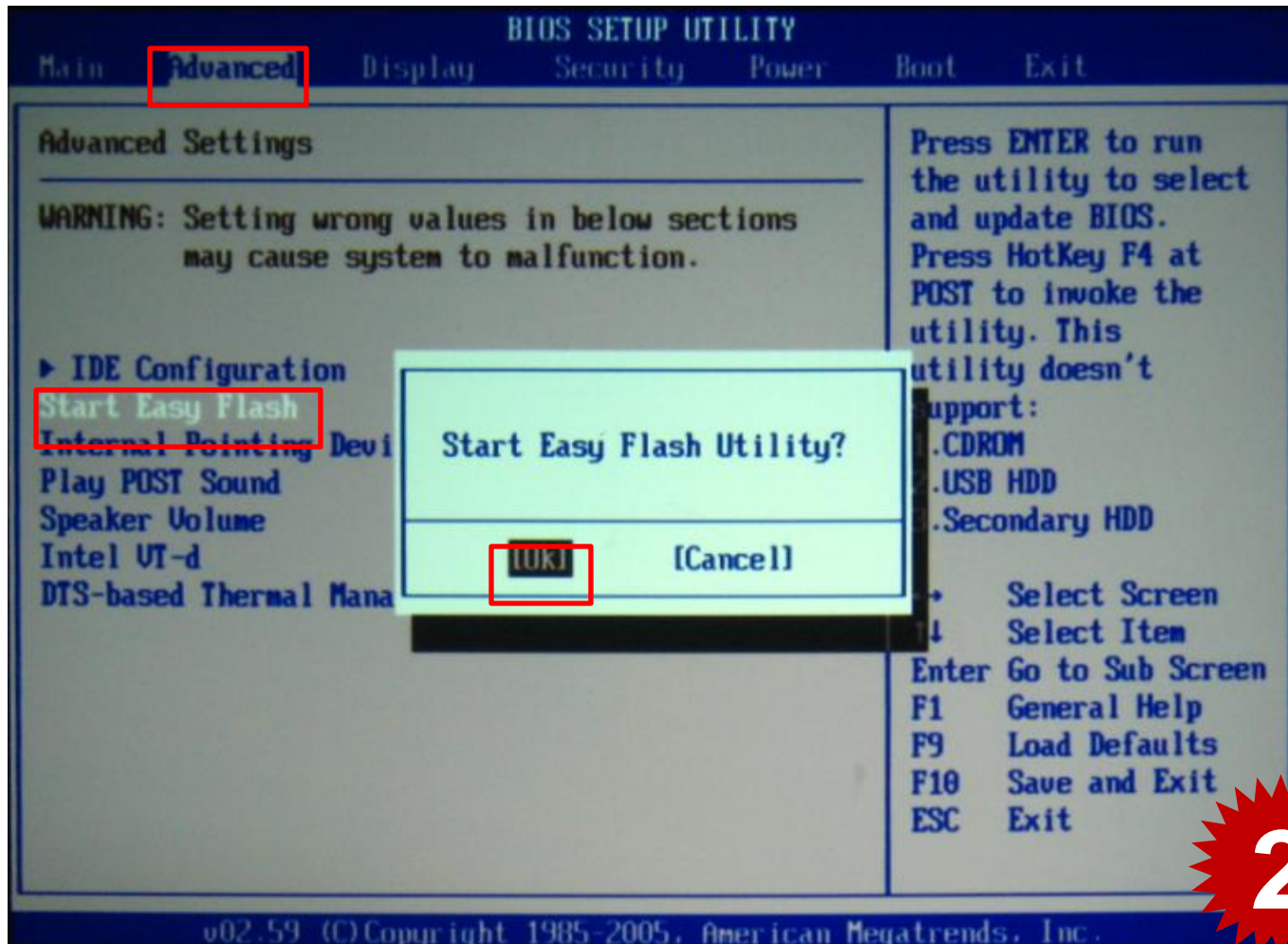
1. Press F2 to enter the BIOS SETUP Interface to start the flashing. The procedure is as below:





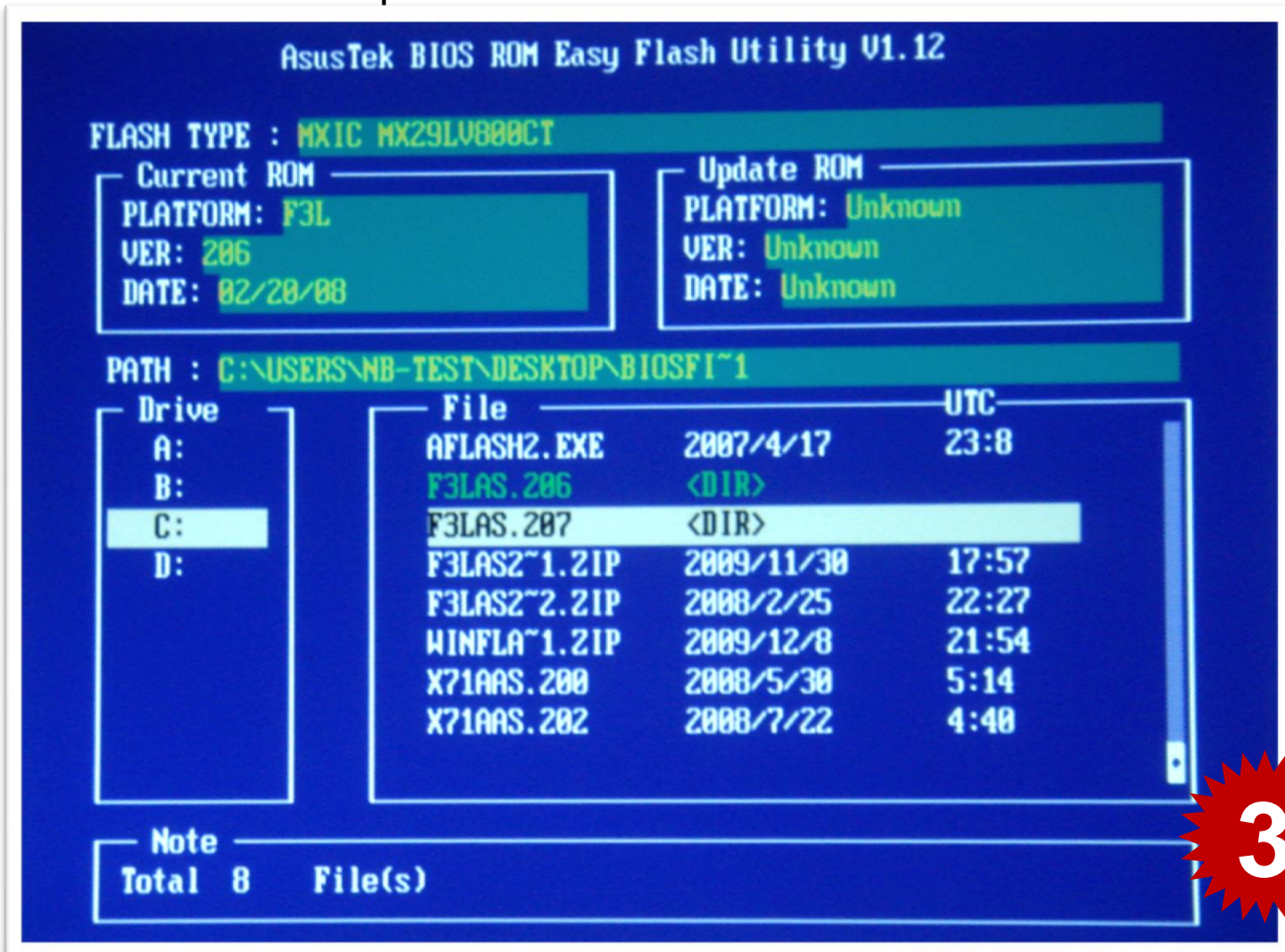
# Flashing BIOS in BIOS SET UTILITY

## 2. Start to Easy Flash



# Flashing BIOS in BIOS SET UTILITY

## 3. Select the BIOS file path

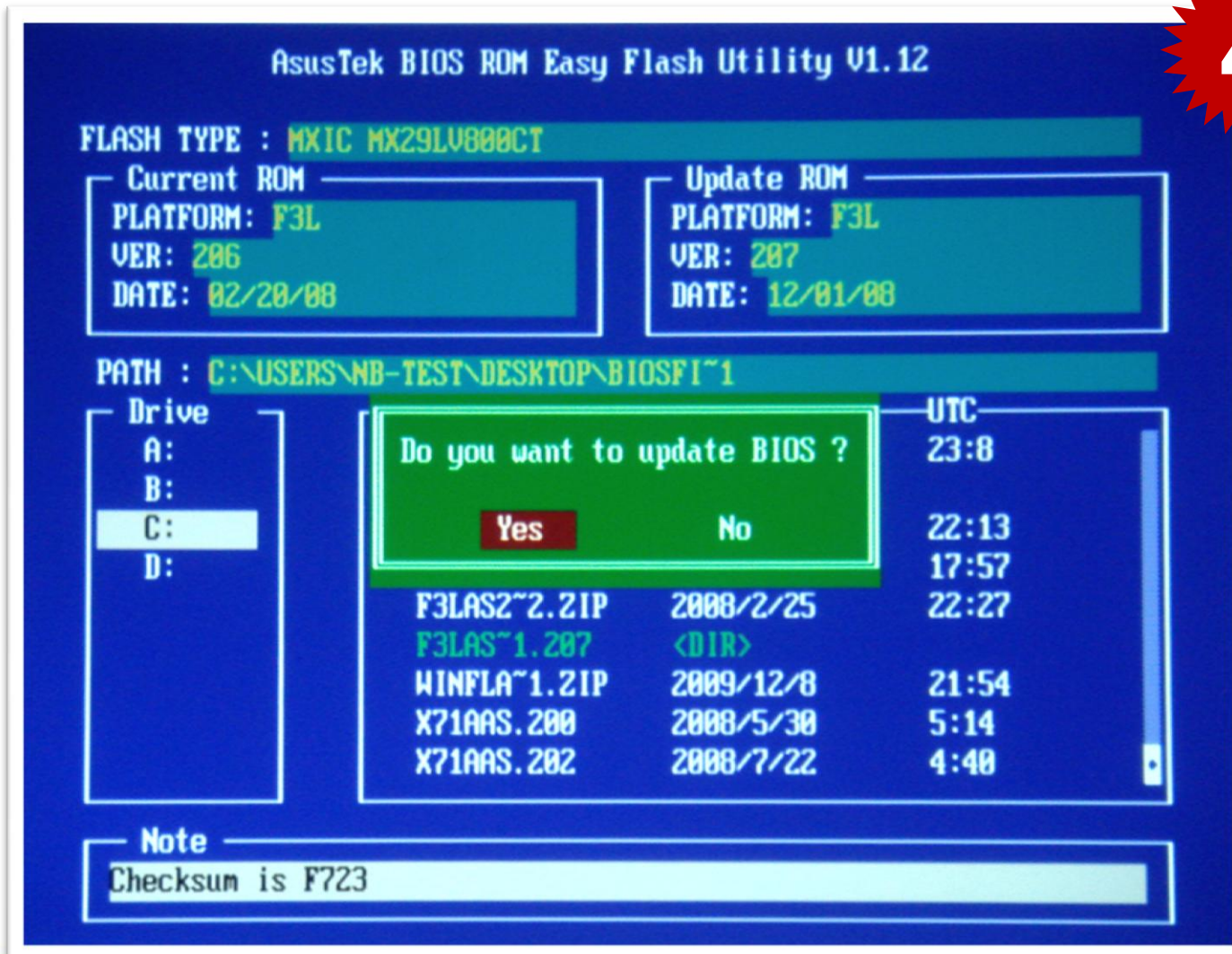




# Flashing BIOS in BIOS SET UTILITY

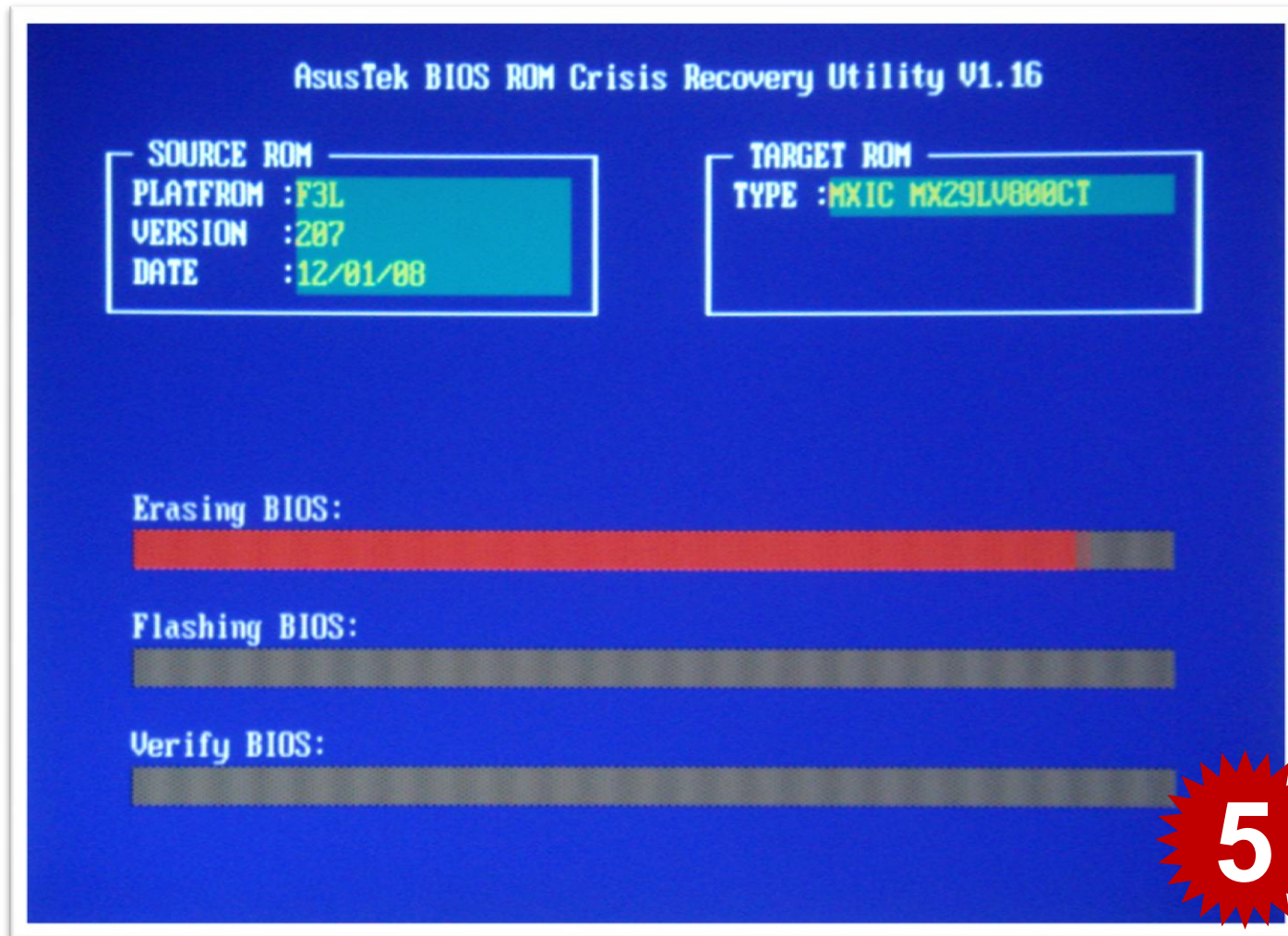
## 3. Confirm to update BIOS

4



# Flashing BIOS in BIOS SET UTILITY

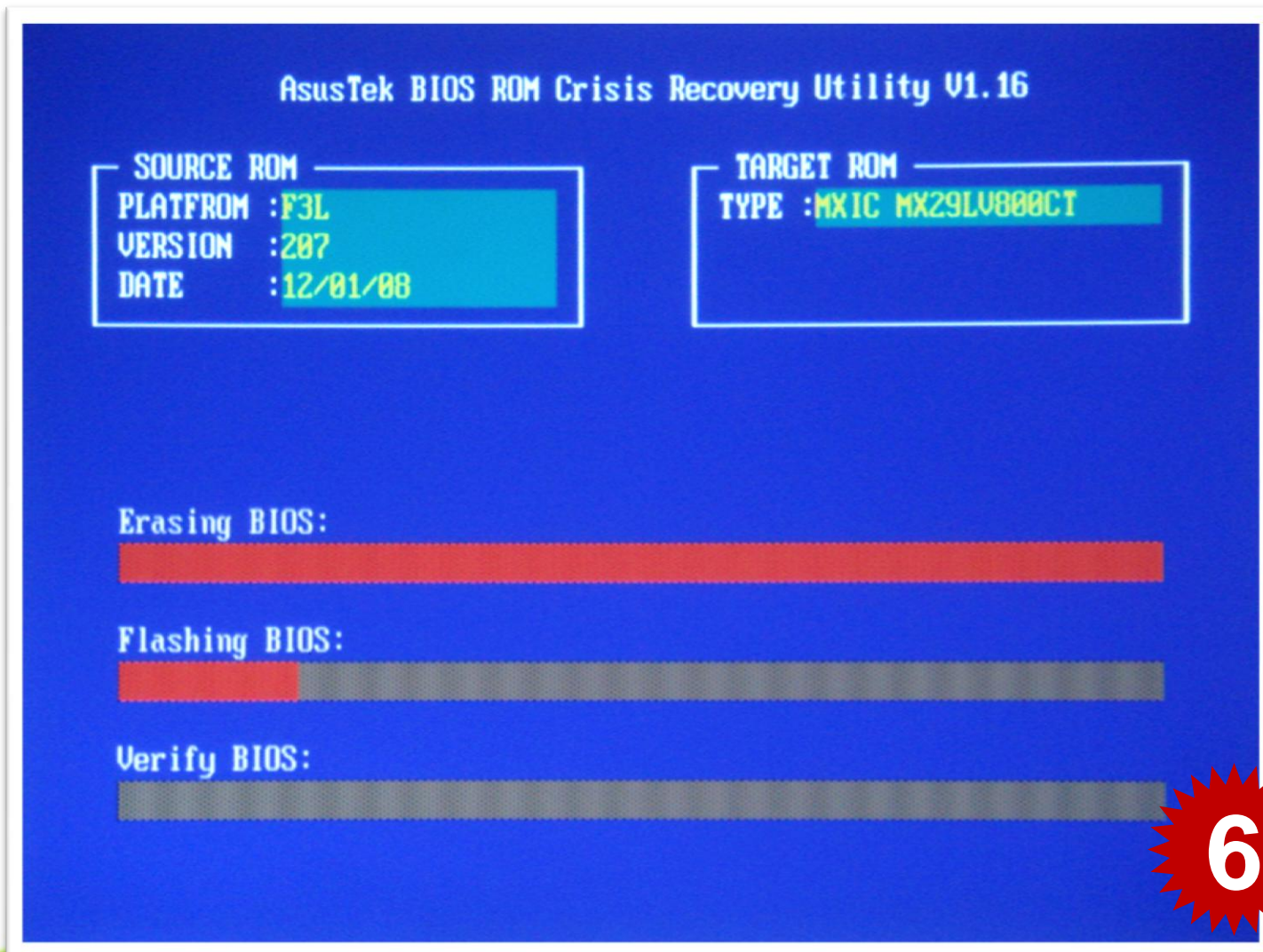
## 4. Erasing BIOS





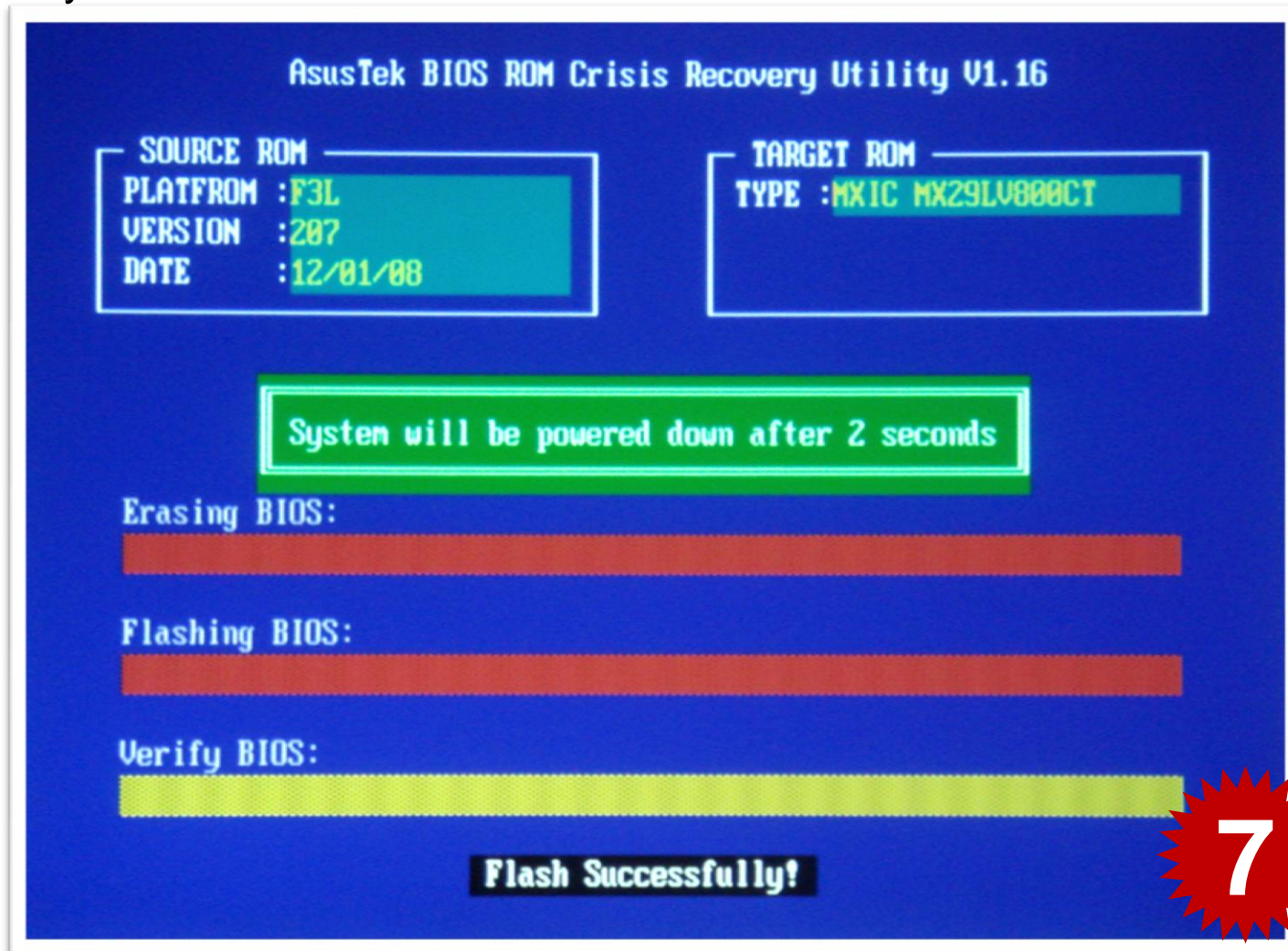
# Flashing BIOS in BIOS SET UTILITY

## 5. Flashing BIOS



# Flashing BIOS in BIOS SET UTILITY

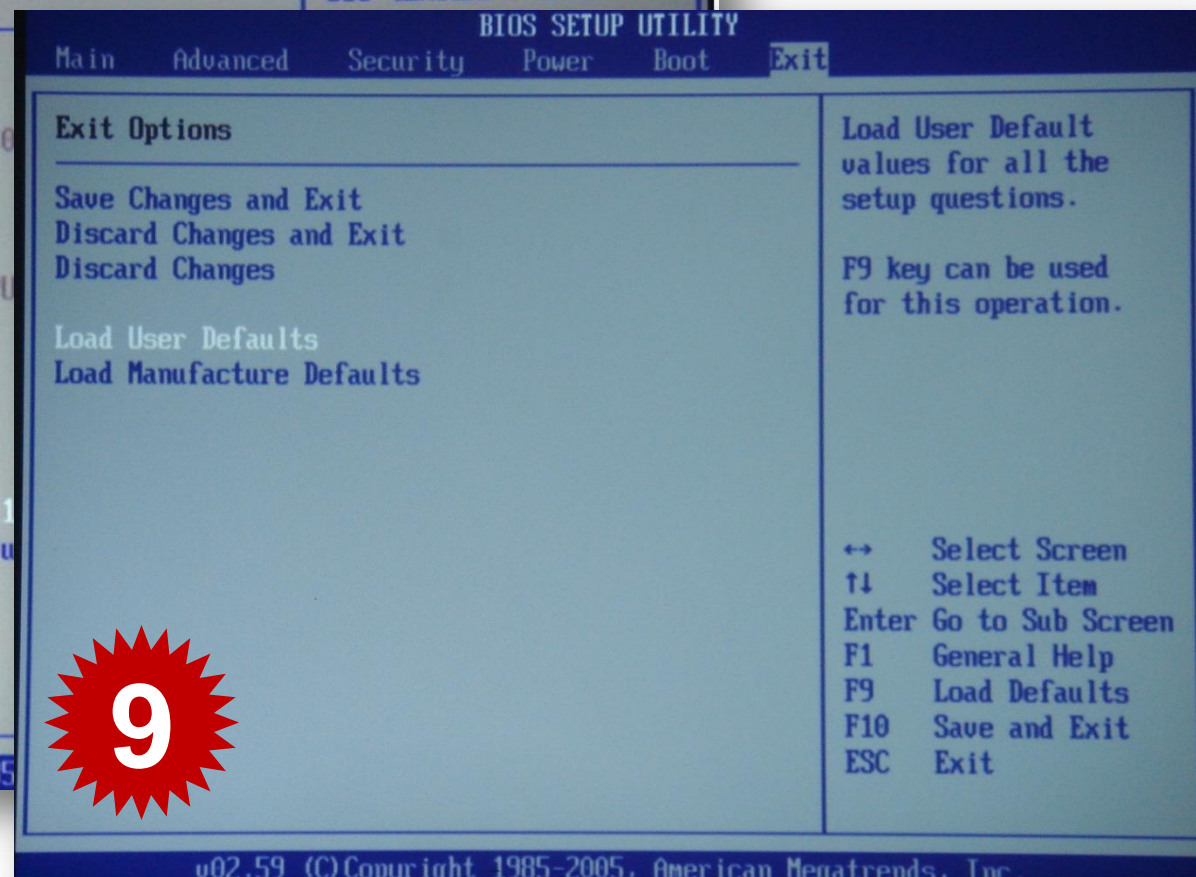
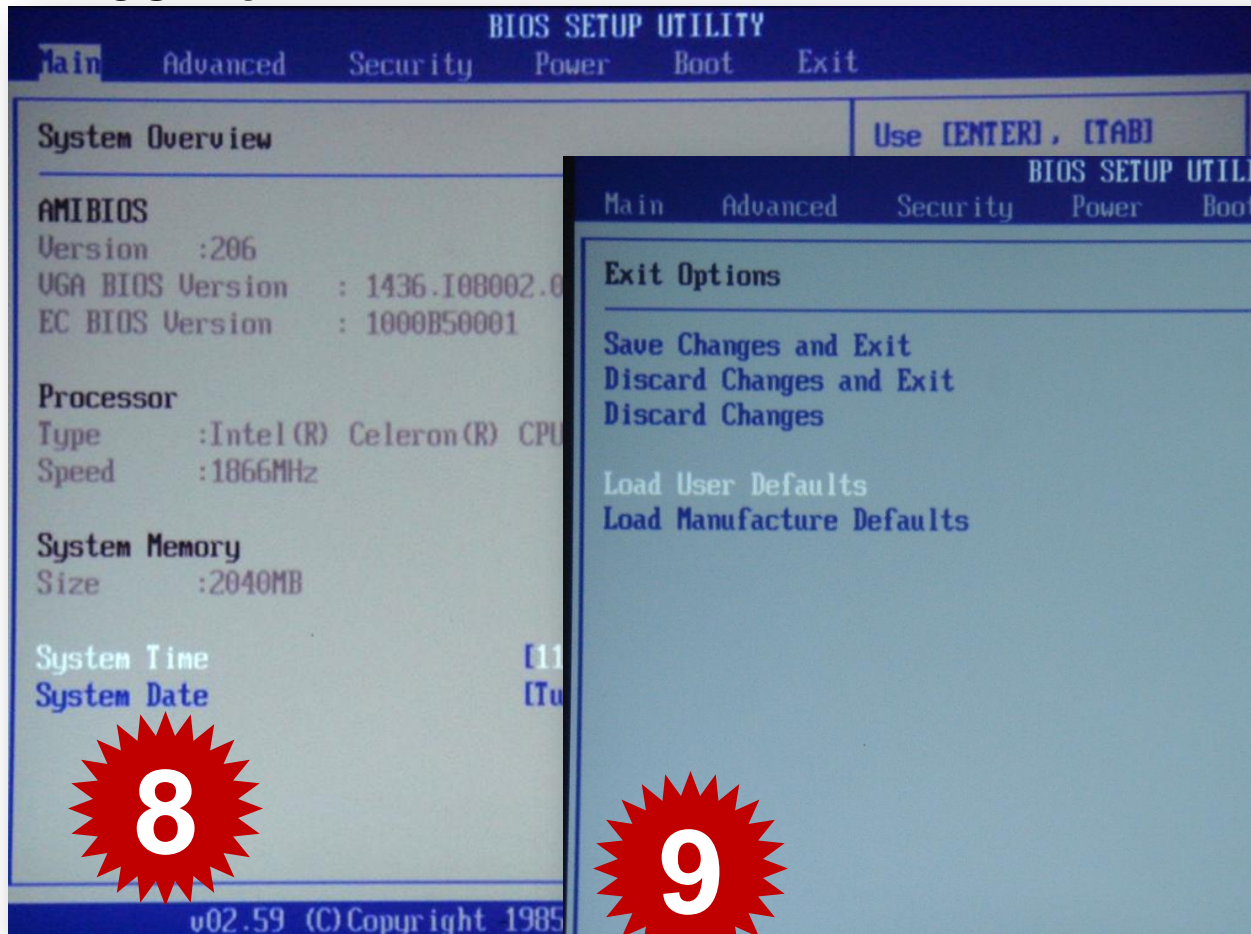
## 6. Verify BIOS





# Flashing BIOS in BIOS SET UTILITY

7. Restart the PC and enter into the BIOS SETUP UTILITY to check the BIOS info.



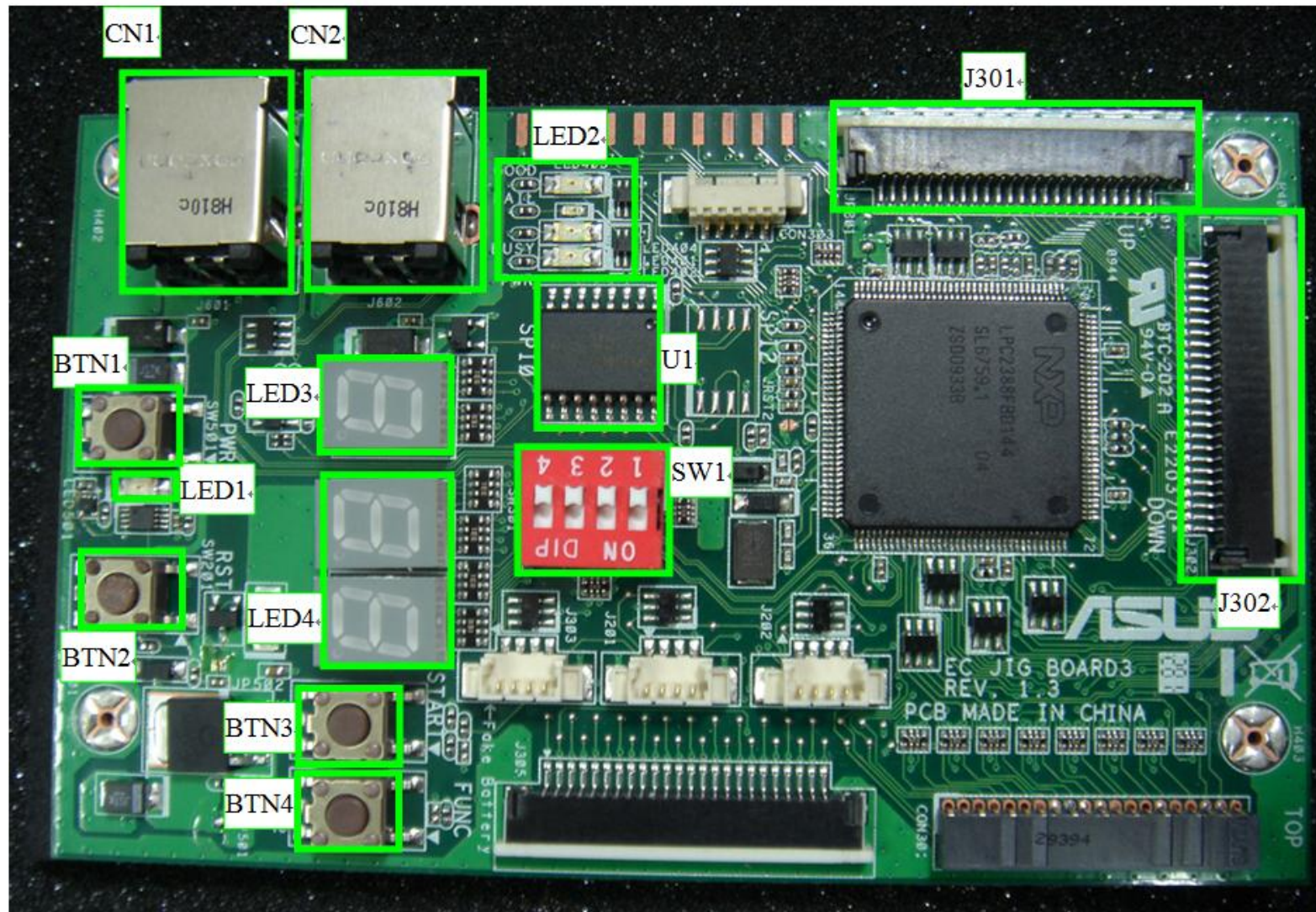
# Flashing BIOS by Jig Board3

## **Description:**

This is a tool for flashing BIOS. The other three ways introduced before is for the software. In the case of failure flashing BIOS by software, which would cause no boot, the BIOS could be flashed by another tool – JIG BOARD3.



# Overview



# Overview

CN1	USB connector.
CN2	GND connector.
BTN1	Main power button.
BTN2	RESET button
BTN3	Start button.
BTN4	Function button.
LED1	Software On Power LED.
LED2	Good, Fail, Busy, PWR LED
LED3	Function indicator LED
LED4	Message ID LED indicator.
SW1	Function Switch
U1	SPI Flash IC
J301	UP connect connector
J302	Down connect connector

# Notebook Supported

The JIG Board3 **ONLY** supports the notebook PC whose **EC chip is ITE**.  
(This list didn't included all the unit but an example.)

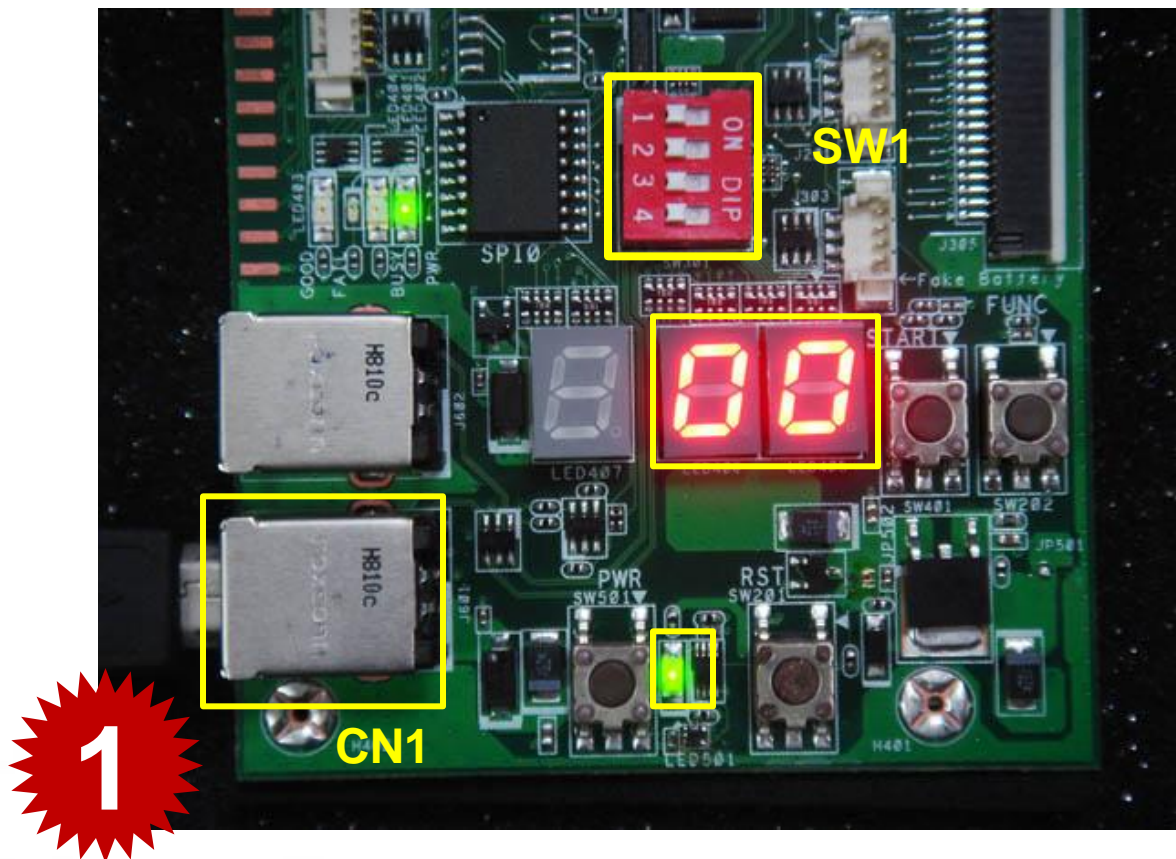
A	C	F	G	R	T	V	W	U	X	Z
A3AC	C90S	F3SA	G1S	R1E	T12EG	VX2S	W2S	U1F	X51R	Z37E
A3FC		F3SC	G2S	R1F	T12FG	V2JE	W7S			Z84J
A3FP		F3SV	G2P		T12FF		W7E			Z96S
A3H		F3SE			T12FH		W1JB			Z62F
A3HF		F9DC			T12FV					Z62FP
A6F		F9E			T12H					Z62FM
A6RP		F9S			T12J					Z62J
A6HF		F2F			T12J3					Z62JM
A7C		F2HF			T12JG					Z84F
A7CD		F2J			T12RG					Z84FM
A7J		F2JE			T12RV					Z91FR
A7F		F3F			TRSA					Z94RP
A7P		F3H			T11F					Z96F
A7S		F3P			T11J					Z96FM
A8E		F3JA			T11JA					Z96H
A8S		F3JC			T11JB					Z96HM
A8SC		F3JP			T11JL					Z96J
A9RP		F3JR			T12RV					Z96JM
		F3JM			T12MG					Z96JP
		F3JV			T12MV					Z96JS
		F3M			T12UV					
		F3T			T13FG					
		F3TC			T13FV					
		F3U			T13MV					
		F5R			T19F					
		F5M			T19H					
		F9F			T19R					
		F9J								



# Flashing BIOS with JIG Board3

## Update BIOS binary file to JIG3

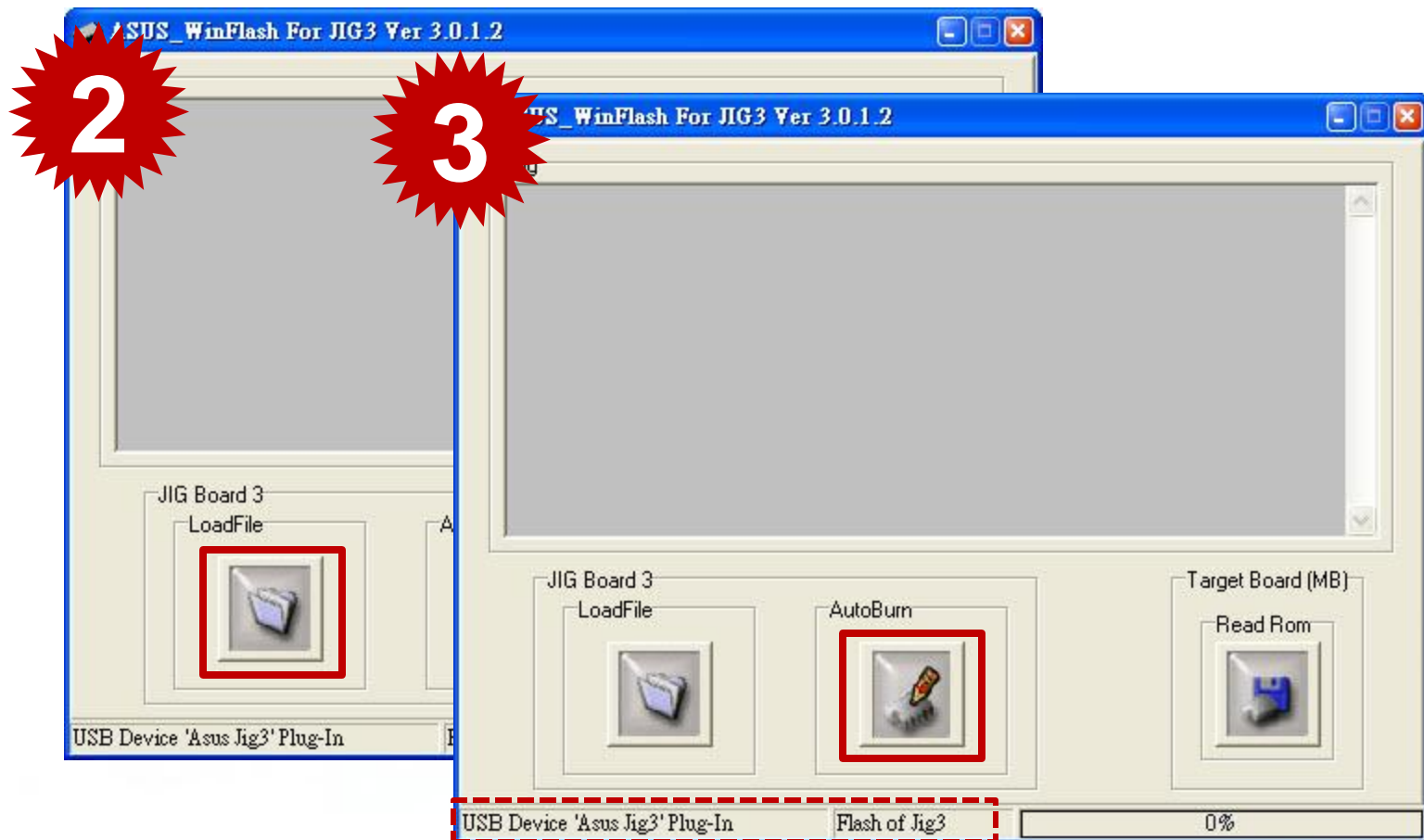
1. Connect USB cable from CN1 to your PC's USB connector. Set SW1 to **0000**. Then press **POWER** button to turn on power. (Power LED will turn on) Please also check LED4 will show **00**.





# Flashing BIOS with JIG Board3

2. Run ASUS Winflash Utility. Check the USB Device 'ASUS JIG3' is plug in and ready to flash. If all is ready, press the button to load and press "Autoburn" to burn the BIOS file.

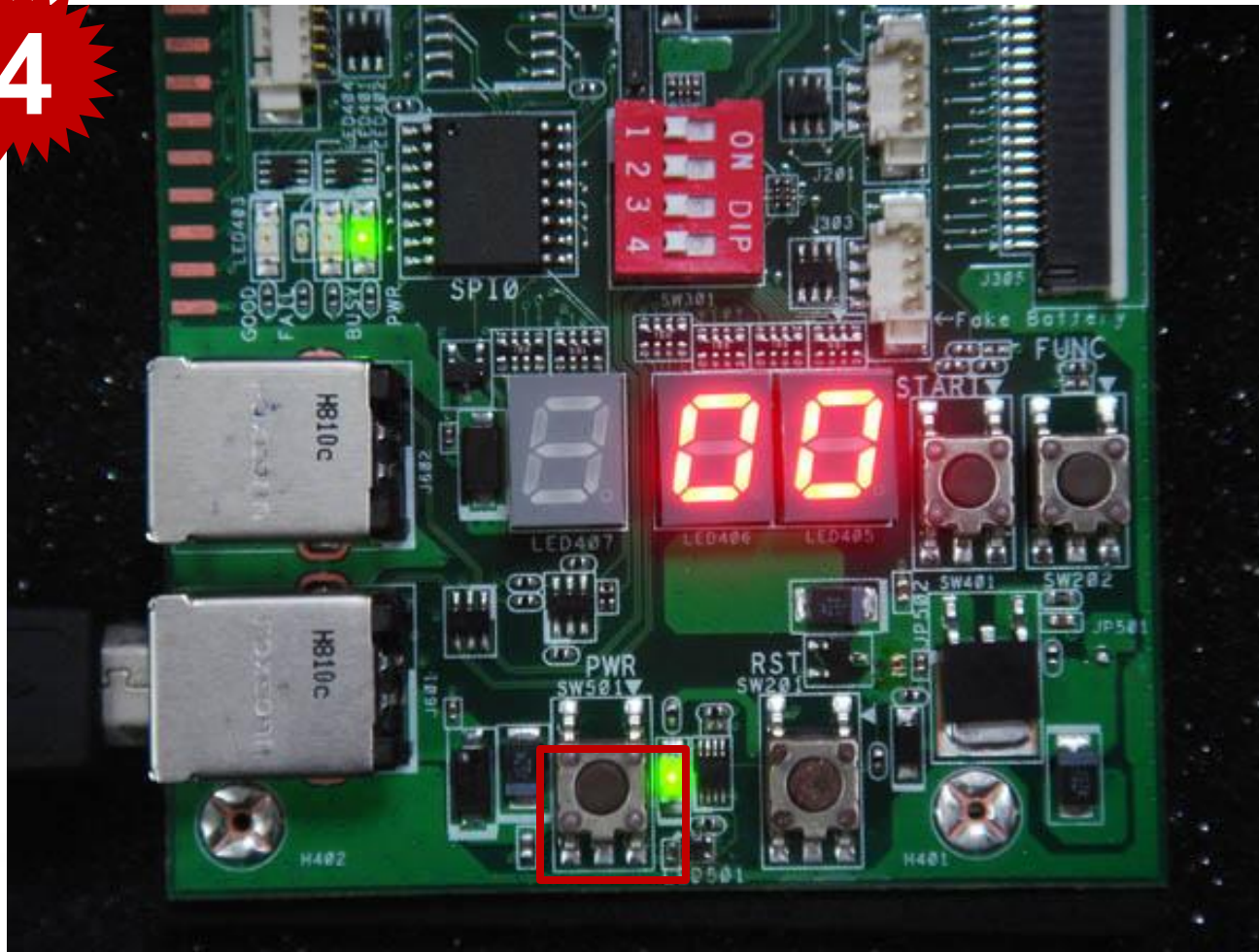


**Check Point**

# Flashing BIOS with JIG Board3

3. When the burning is done, press POWER button again to turn off the main power.

4



# Flashing BIOS with JIG Board3

## Upload the target board's BIOS ROM

1. Remove the **battery** and the **power supply** of the target board.

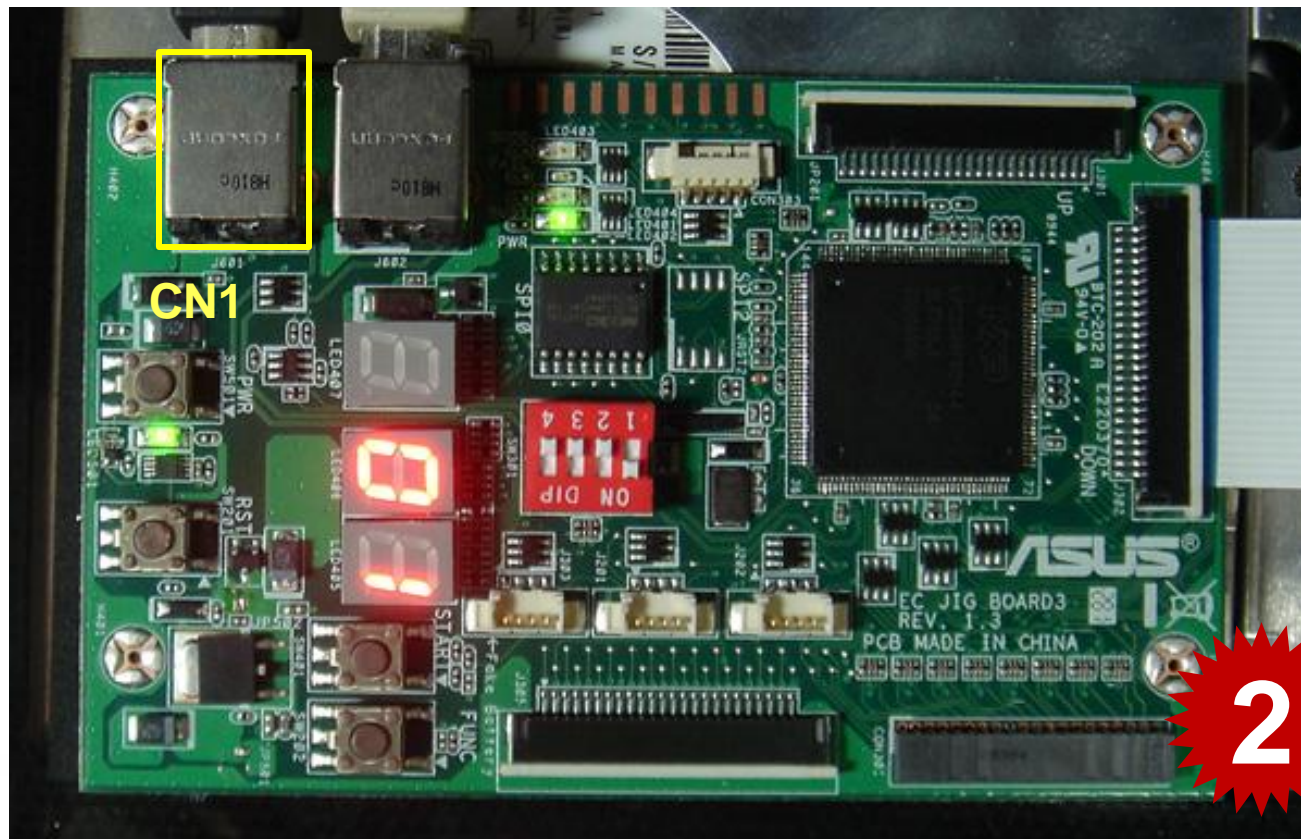


1



# Flashing BIOS with JIG Board3

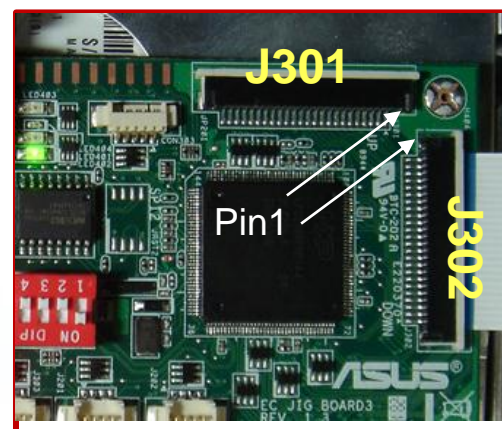
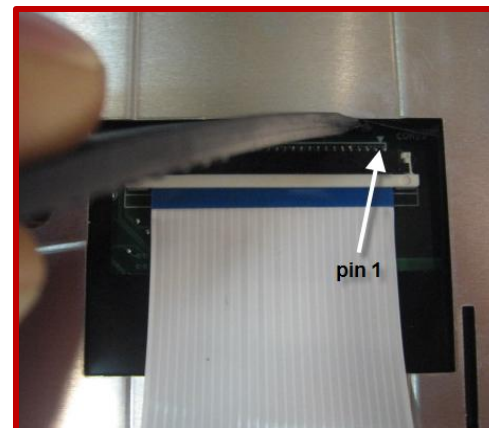
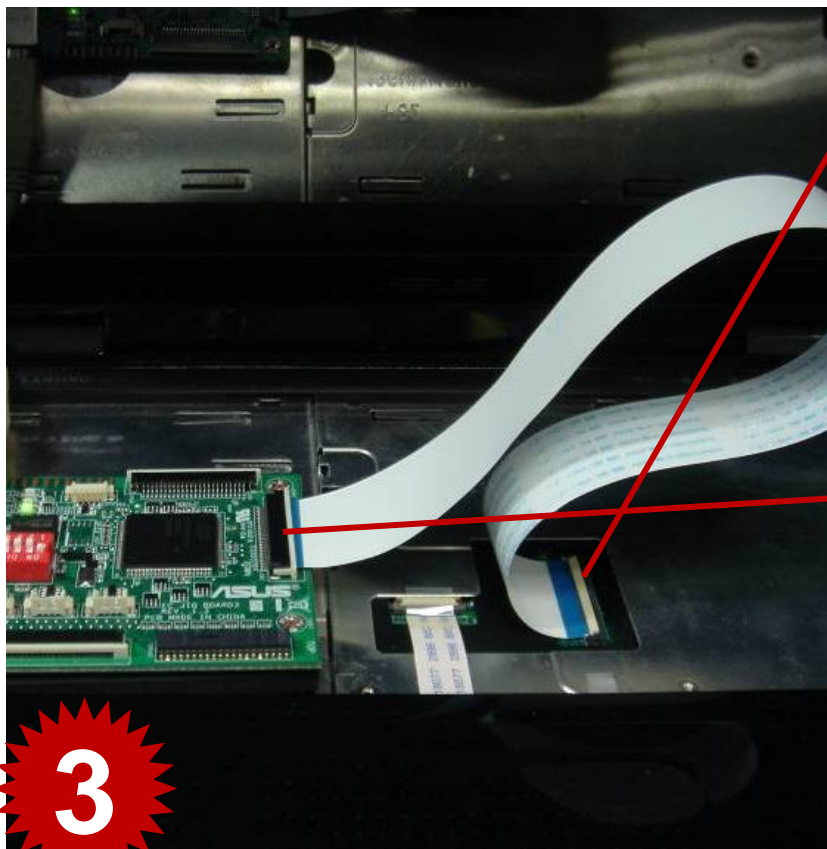
2. Connect the USB cable from CN1 to your PC's USB connector. ( Make sure here the PC is not the target board while is another PC to support the power to the JIG board3.)





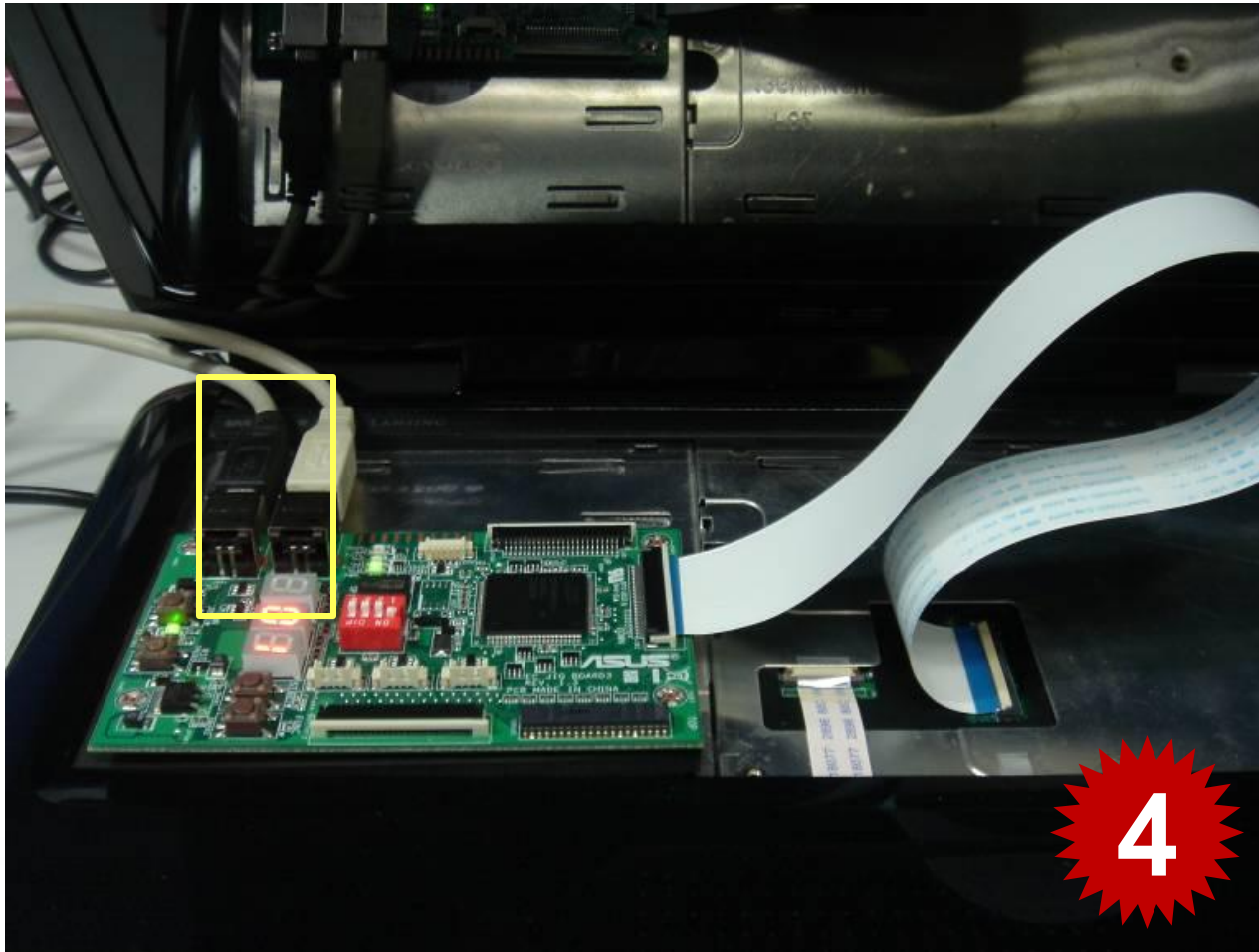
# Flashing BIOS with JIG Board3

3. Connect FPC cable from J301(UP connect) or J302(Down connect) to your target board's keyboard connector, choosing J301 or J302 by target board connector type. Make sure JIG3 J30x's Pin1 is connected to keyboard connector's Pin1 of the target board.



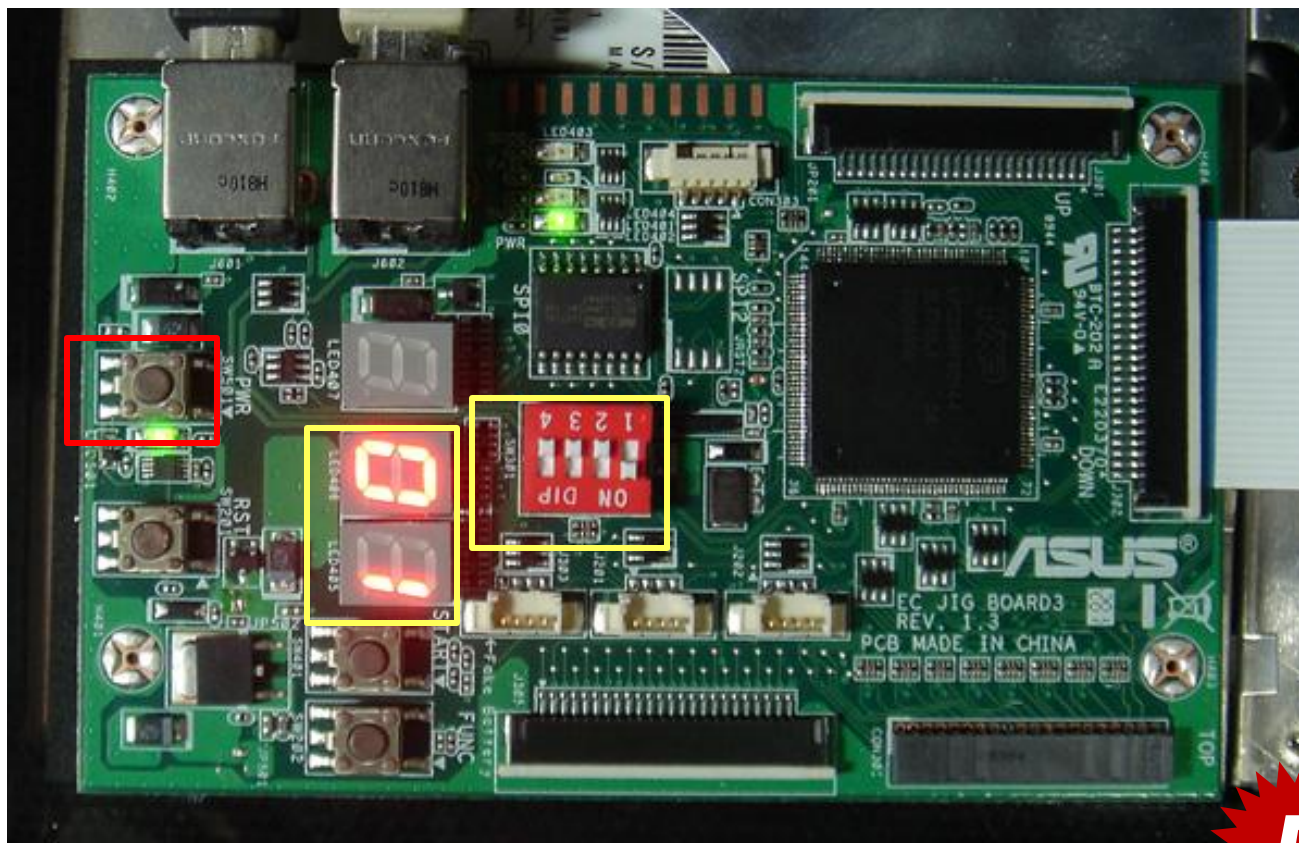
# Flashing BIOS with JIG Board3

4. Use a USB cable to make common ground between JIG3 and target board. Connect JIG3 CN2 to the USB port of target board and **make sure all power sources was removed from target board.**



# Flashing BIOS with JIG Board3

5. Set DIP to “1000” and turn on JIG3 Power.LED4 will show 01.

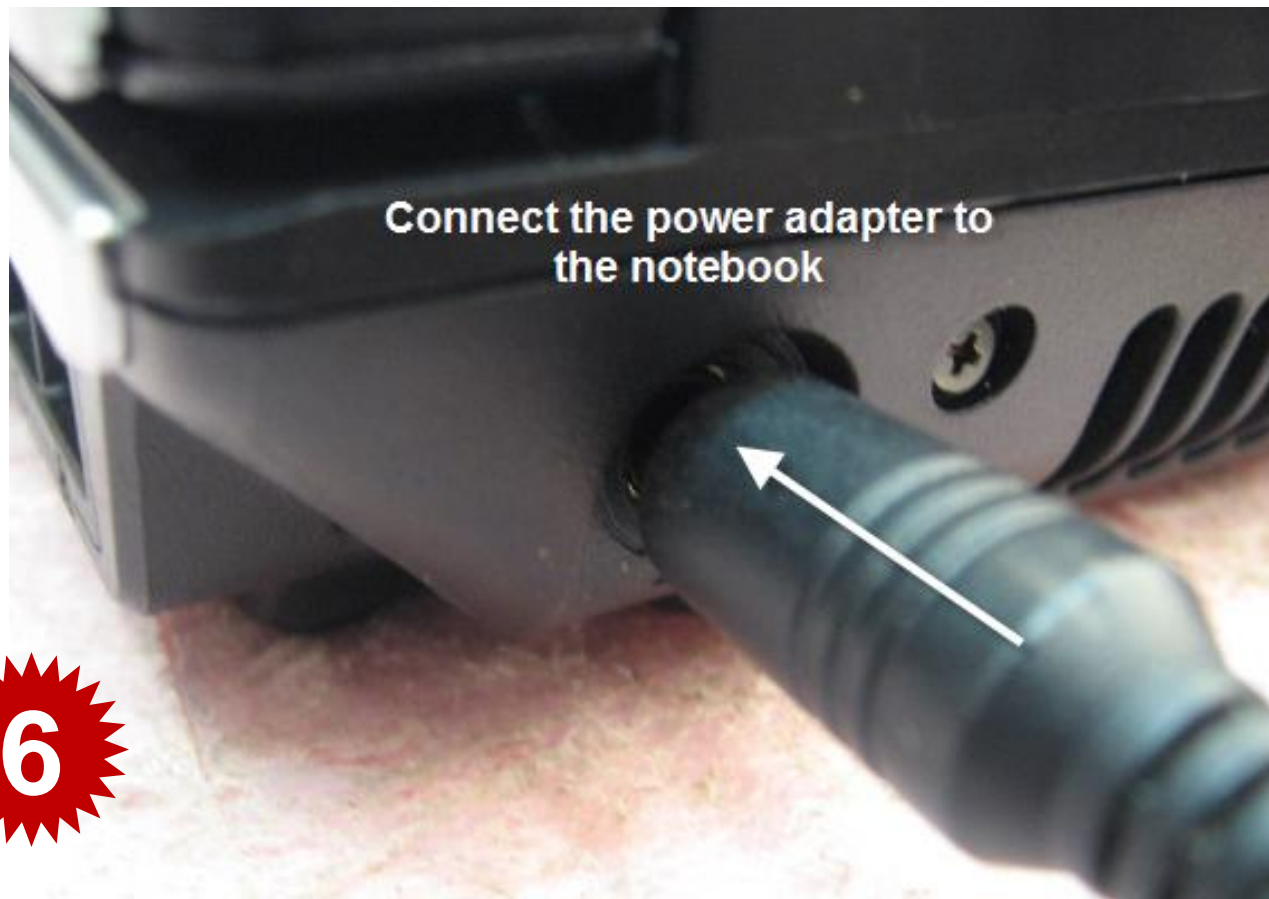


5



# Flashing BIOS with JIG Board3

6. Make sure JIG3 is on and the finally connection is the power adapter into the target board.



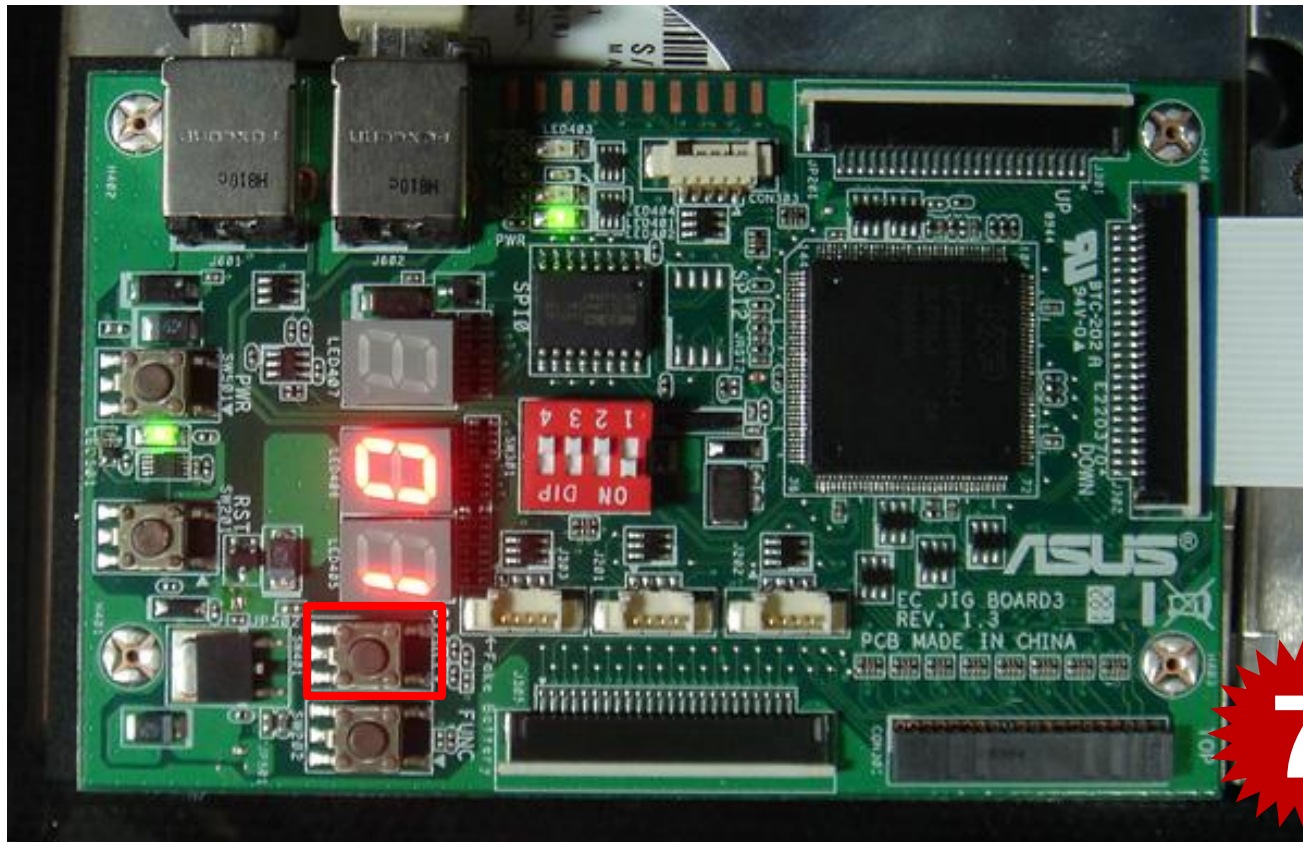
Don't  
power on  
the target  
board  
before  
JIG3  
POWER  
ON.

6



# Flashing BIOS with JIG Board3

7. Wait until busy LED off and press Start button. Update will be start. Wait for a few second, LED4 show “88” and Good LED in LED2 is on. Remove power supply from target board. Turn off JIG3 power.



# Message ID List

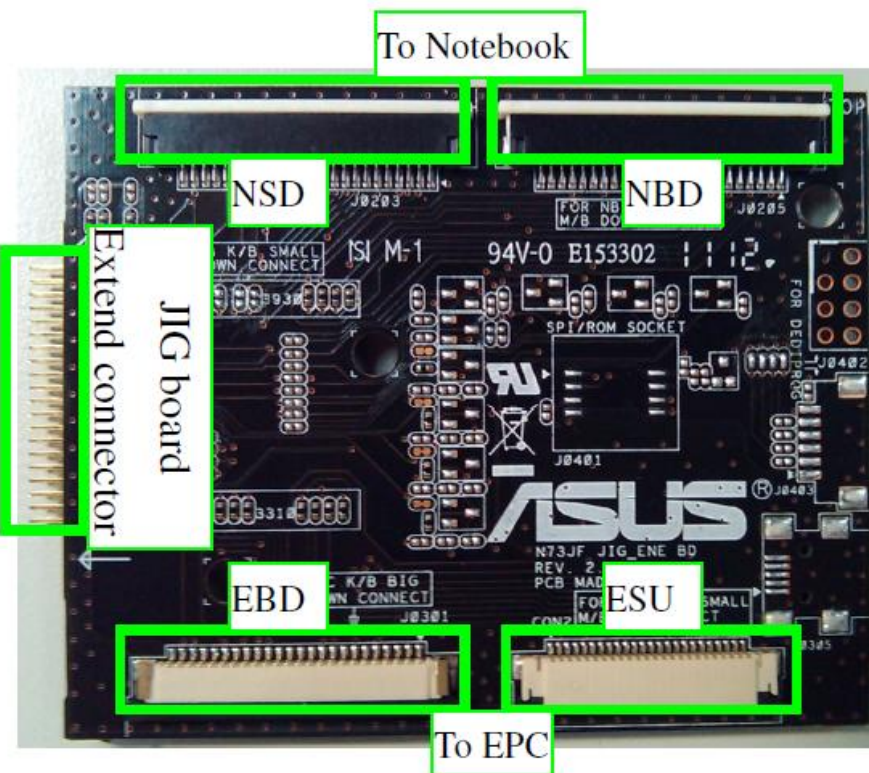
Message	Process	Note
55	KBS test fail	The scenario will influence by the following conditions : The JIG Board crisis recovery data structure did not match the target keyboard connector define. The target system has other power sources before JIG3 turn on.
10	Flash erase	
20~2F	Flash Check	
30~3F	Flash Programming	
40~4F	Flash Verify	
CC	Flash Error	Could not detect Flash
DD	Bios file error	
88	Flash successfully	
4F	Bootloader Error	Need update JIG3 Firmware.

# SPI Extend Card Overview

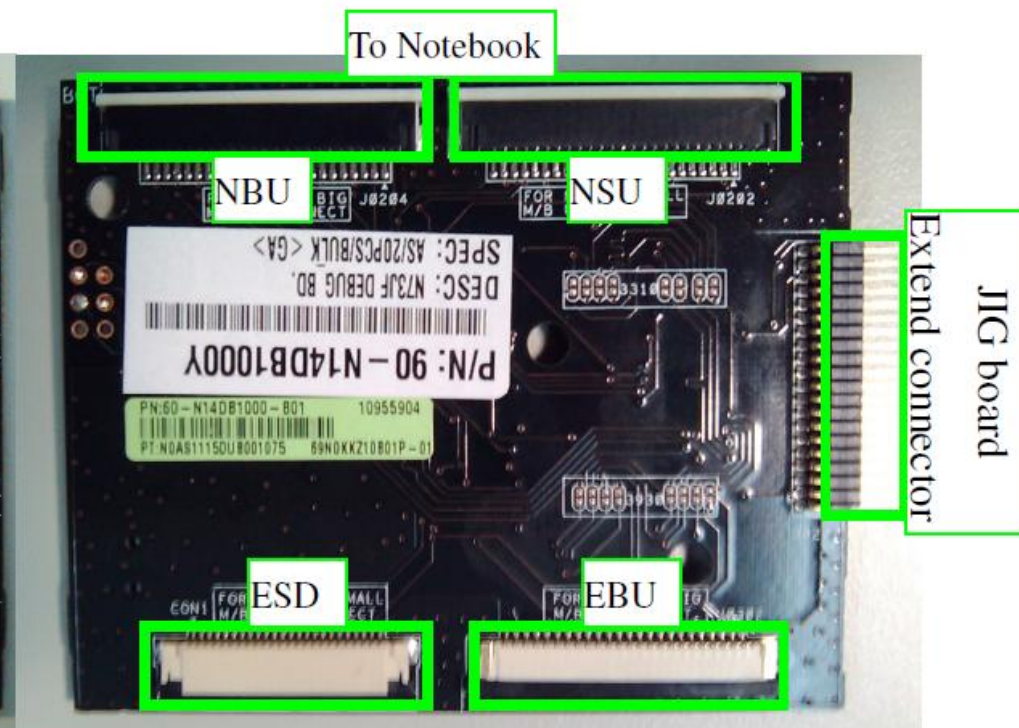
## Description:

This tool can support JIG Board3 to flash BIOS on Compal machines.

Front



Back





# SPI Extend Card Overview

NSD	Notebook Small keyboard Down connector.
NBD	Notebook Big keyboard Down connector.
NSU	Notebook Small keyboard Up connector
NBU	Notebook Big keyboard Up connector
EBD	EPC Big keyboard Down connector.
ESU	EPC Small keyboard Up connector
ESD	EPC Small keyboard Down connector.
EBU	EPC Big keyboard Up connector

The JIG Board3 with SPI Extend Card **ONLY** supports the notebook PC whose **EC chip is ENE**. (This list didn't included all the unit but an example.)

## K series

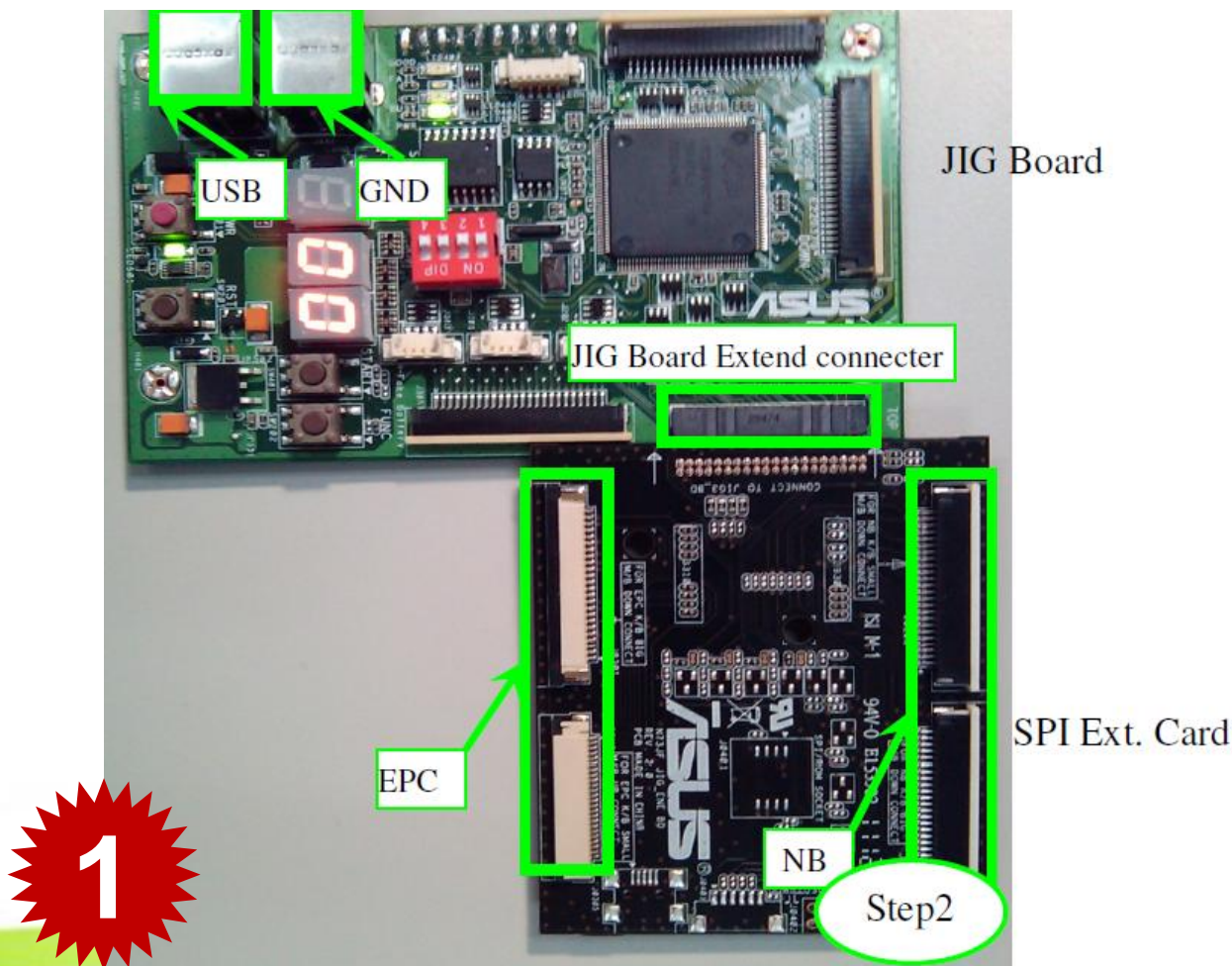
K43BY  
K53BY  
K53U  
K43U  
K73BY  
K43TA  
K93SV  
K73TA



# Flashing BIOS with JIG3 and SPI Card

## Update BIOS binary file to Target via SPI extend card

1. Remove all power source (include battery and power supply) from target board. Plug in SPI extend card to JIG3 extend port (CON301). **Extend card doesn't support hotplug.**



# Flashing BIOS with JIG3 and SPI Card

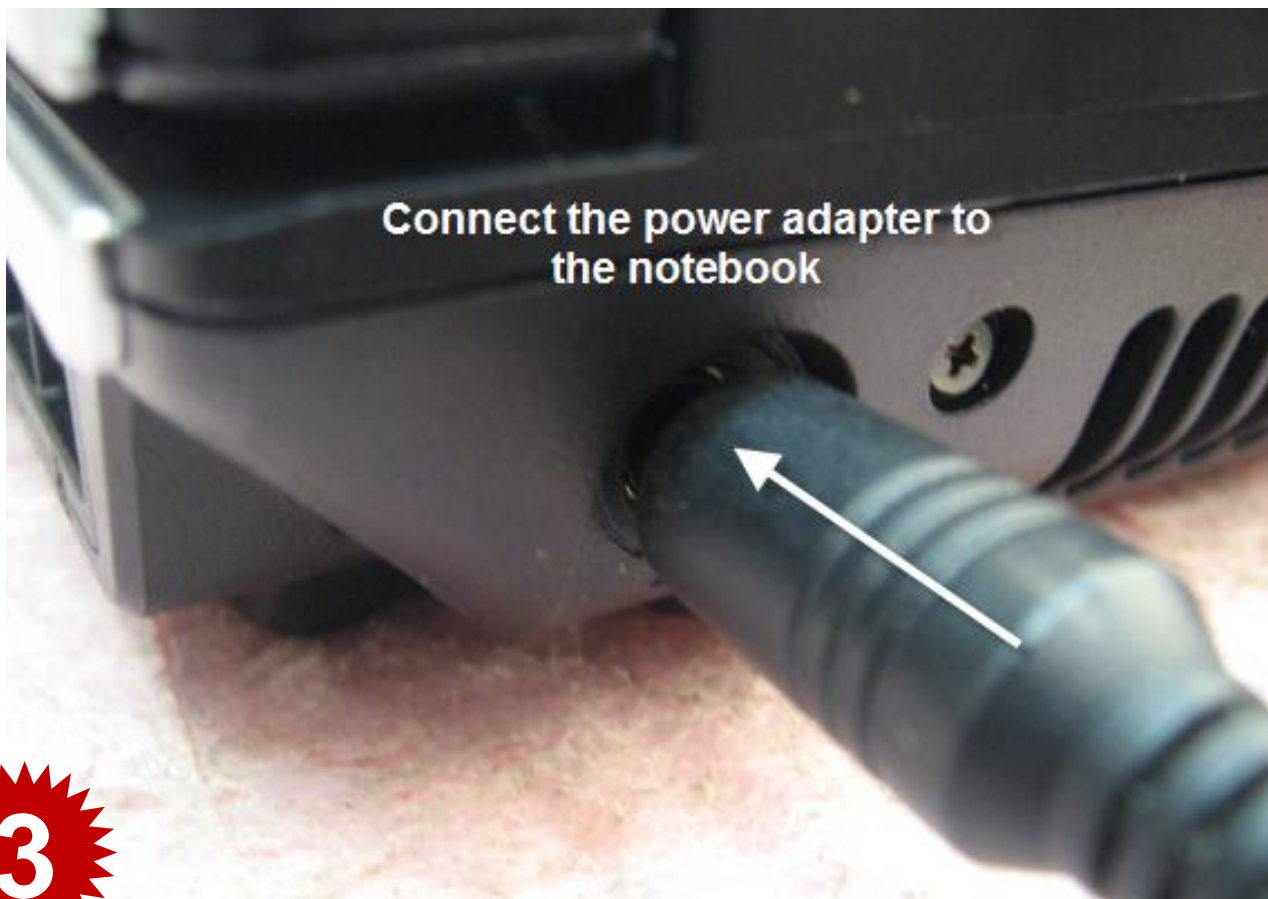
2. Connect the USB cable from CN1 to your PC's USB connector. Connect FPC cable from SPI extend card to your target board's keyboard connector, **make sure SPI extend card connect Pin1 is connected to target board's keyboard connector Pin1.**



2

# Flashing BIOS with JIG3 and SPI Card

3. Use a USB cable connect GND between JIG3 CN2 and target board USB port. **Make sure all power sources was removed from target board.**

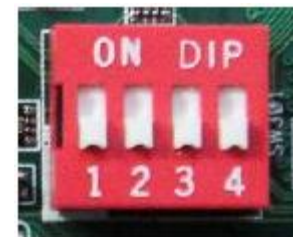


3

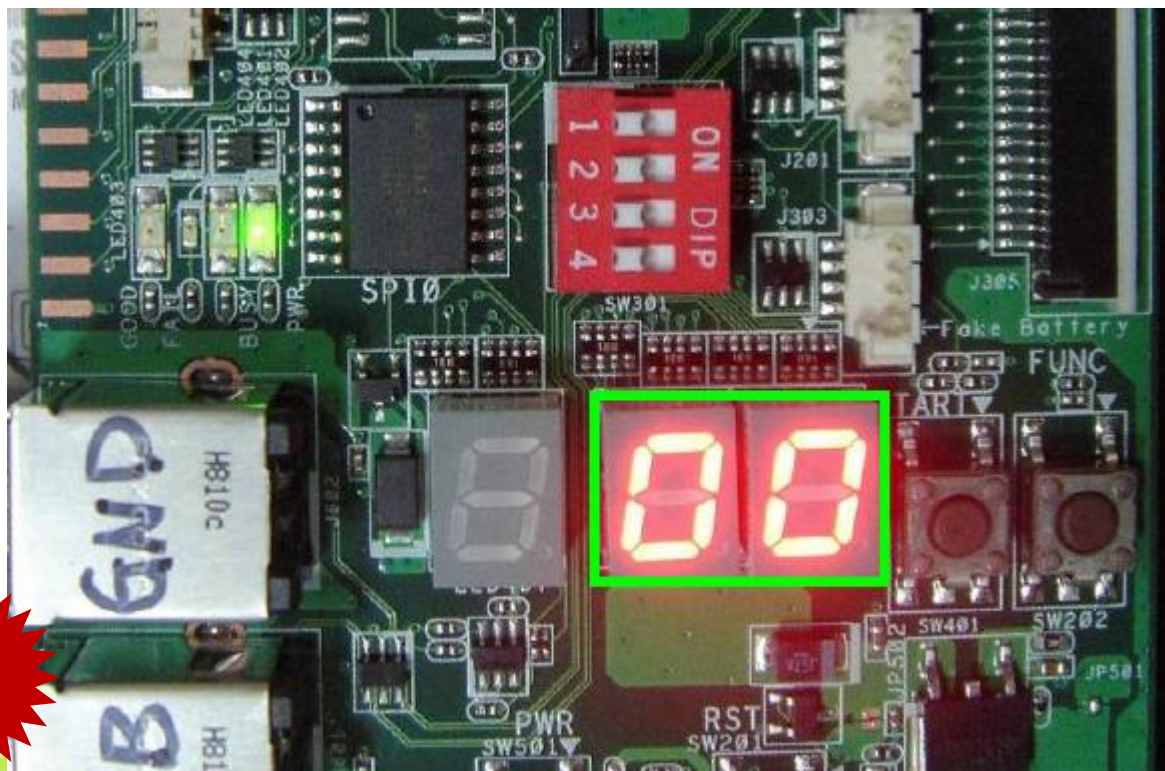


# Flashing BIOS with JIG3 and SPI Card

4. Set SW1 to 0000.



5. Press POWER button to turn on the power, power led will turn on. Check LED4 will show 00.



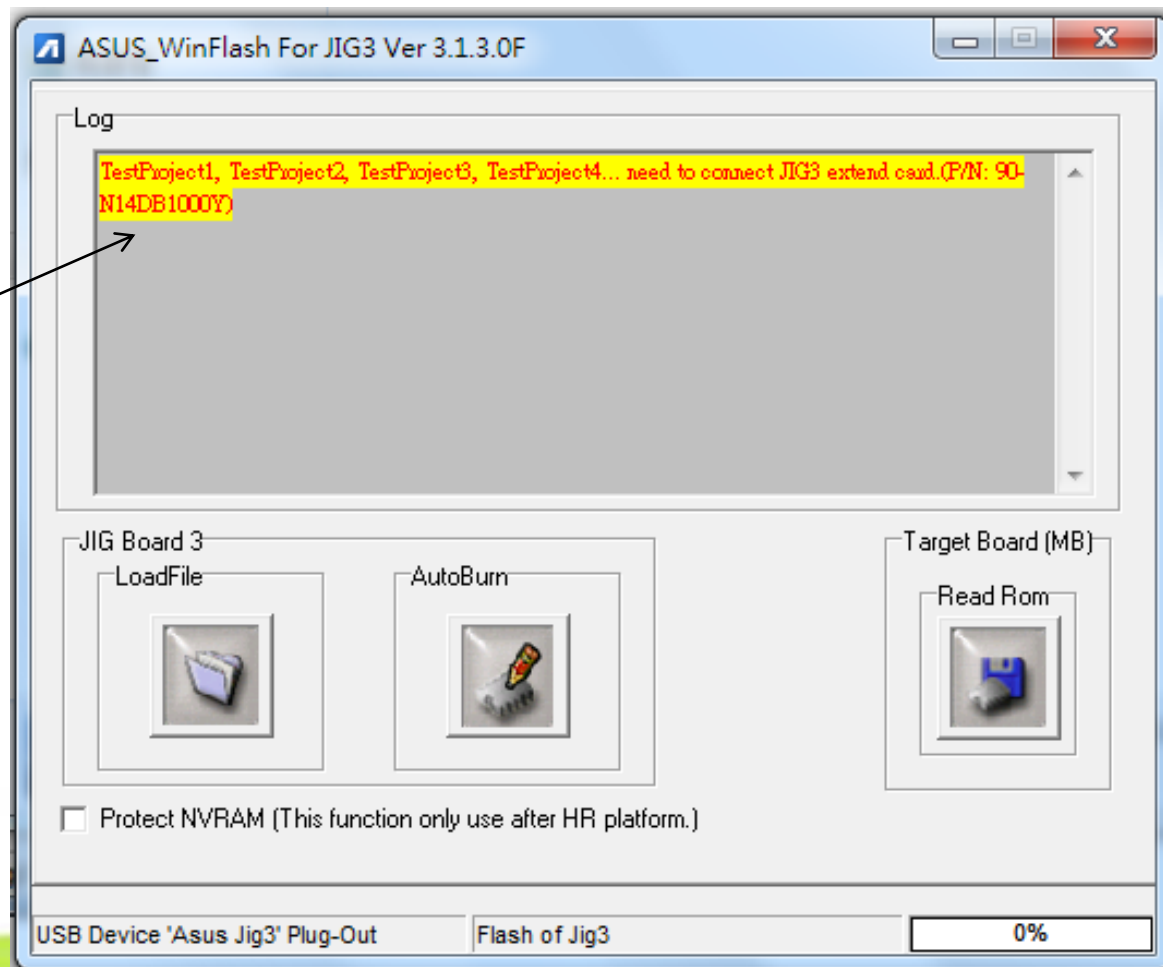
4



# Flashing BIOS with JIG3 and SPI Card

6. Run ASUS\_WinFlash utility. The logo will show the project name that has to connect target board and SPI extend card. **If you didn't connect it yet, please exit the ASUS\_WinFlash and go back to the step 1.**

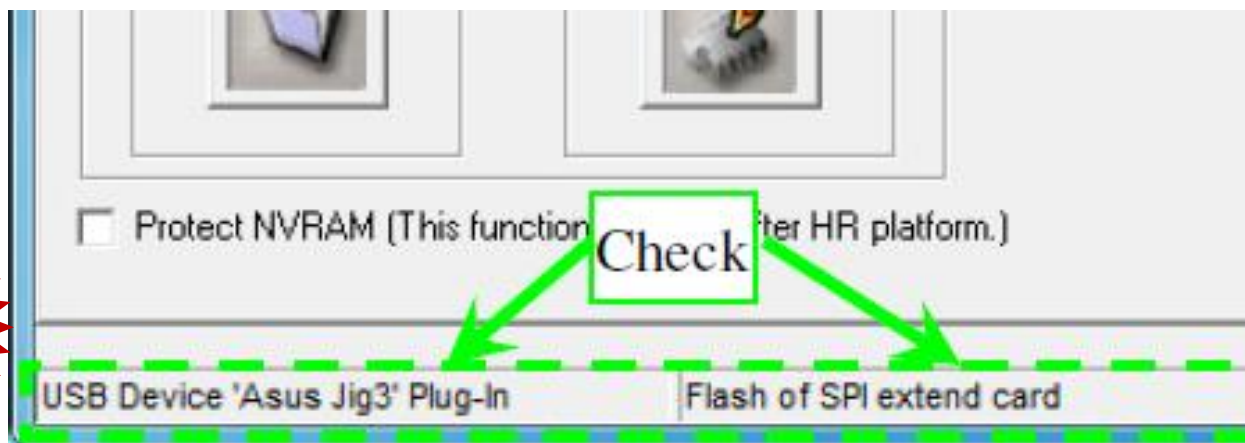
Check it



# Flashing BIOS with JIG3 and SPI Card

7. Check the **USB Device "ASUS JIG3"** is Plug-in and **Flash of SPI extend card**.

5



# Flashing BIOS with JIG3 and SPI Card



6

# Chapter 7

## Windows Testing Program



# Download WTP Program

[Support](#) [Repair](#) [Learning](#) [Project](#) [Survey](#) [Document](#) [ITRS](#) [Admin](#) [Profile](#)

## Browse Support

### for Products

Motherboard  
Notebook  
Eee Family  
Graphic Card  
Mobile Phone  
PDA  
PND  
Server

select Product

### for Services

Contact window  
GFU Introduction  
Organization

### Talk to us

Contact Support  
Online Support Feedback



## News

- [Events] 【Notice】 RMA forum chinese version(test version) has been online ! 2010.03.08  
[Events] 【Notice】 RMA Forum New Function Online ——Tech points 2010.03.04  
[Events] GRMA new organization issued ! 2009.12.29  
[Events] RMA support web user guide version 2.0 issued 2009.12.23  
[Events] RMA Support web announcement ! 2009.12.22



Report | [more](#)



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Support download | [more](#)

## What's hot

- 2010.03.25  
MB/GA/DT/Server weekly(y10w13)
- 2010.03.25  
NB/Eee PC/Eee Family weekly  
(Y10W11)
- 2010.03.24  
ODD weekly(Y10W13)
- 2010.03.23  
EeePC Window Test Program official  
Version Release
- 2010.03.18  
MB/GA/DT/Server weekly(y10w12)

[more](#)

## Training

### ACTRE Training

Learn more about new ACTRE training material.

### ALSA Training

Learn more about 2009 ALSA training schedule.

### NPI Training

Learn more about new NPI training material.

## Solutions

### RMA KB



This five steps will conquer most BSOD issues

### Repair Tooling



Get more information from GRMA about repair tooling

### RMA Forum



Exchange your ideas and solutions at our RMA Forum

### TPS

How to improve the work layout and increase the production?

[Learn more](#) | [more](#)

### eCircuit Diagram

Is it hard to be traced?  
Not anymore.

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### PCB Repair

Enjoy fast net finding, PN inquiry and look over other specs efficiently.

[Learn more](#) | [more](#)

## Repair

- [Test Program \(Main Program&Utilities\)](#)
- [Key Parts Test](#)
- [Technical KB](#)
- [NB Service Guide](#)
- [Clear CMOS](#)
- [BGA Technology](#)
- [Repair Code](#)
- [Technical Support \(For China\)](#)
- [Repair Technology Express](#)

**Step 1: Login *RMA Support Web* and click *Test Program*.**

# Download WTP Program

Step 2: Follow the path and download WTP.

Public Folder → GRMA → Test Program (Main Program & Utilities ) → System Product WTP

--> Path

New Document | New Folder | Search | Latest 20 Documents

Type Name



SOP

--> WTP SOP



BIOS\_TXT

--> BIOS check list



WTP

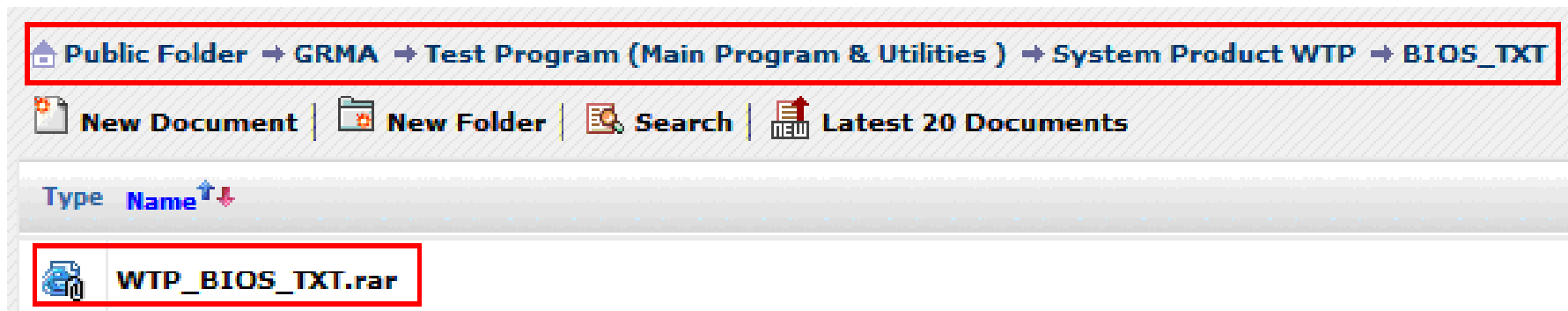
--> Main program

Scope: Models: EPC/NB/E-Pad

Applied OS: Windows XP/Vista/Win7

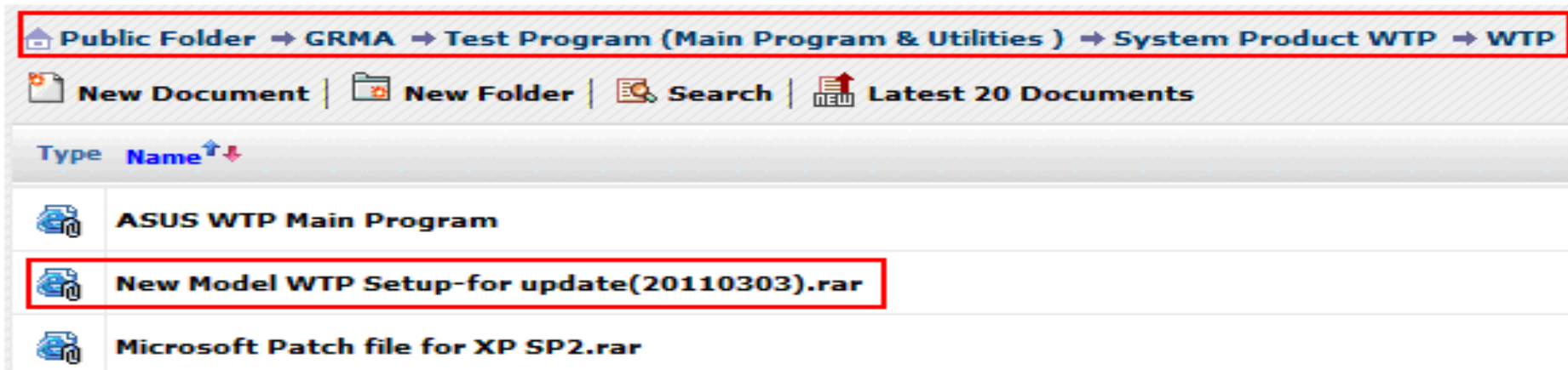
# Download WTP Program

Step 3: Update WTP BIOS TXT: The new Bios will be release every week. Please download file and overwrite WTP BIOS\_TXT to WTP \ bin \ conf \.



# Download WTP Program

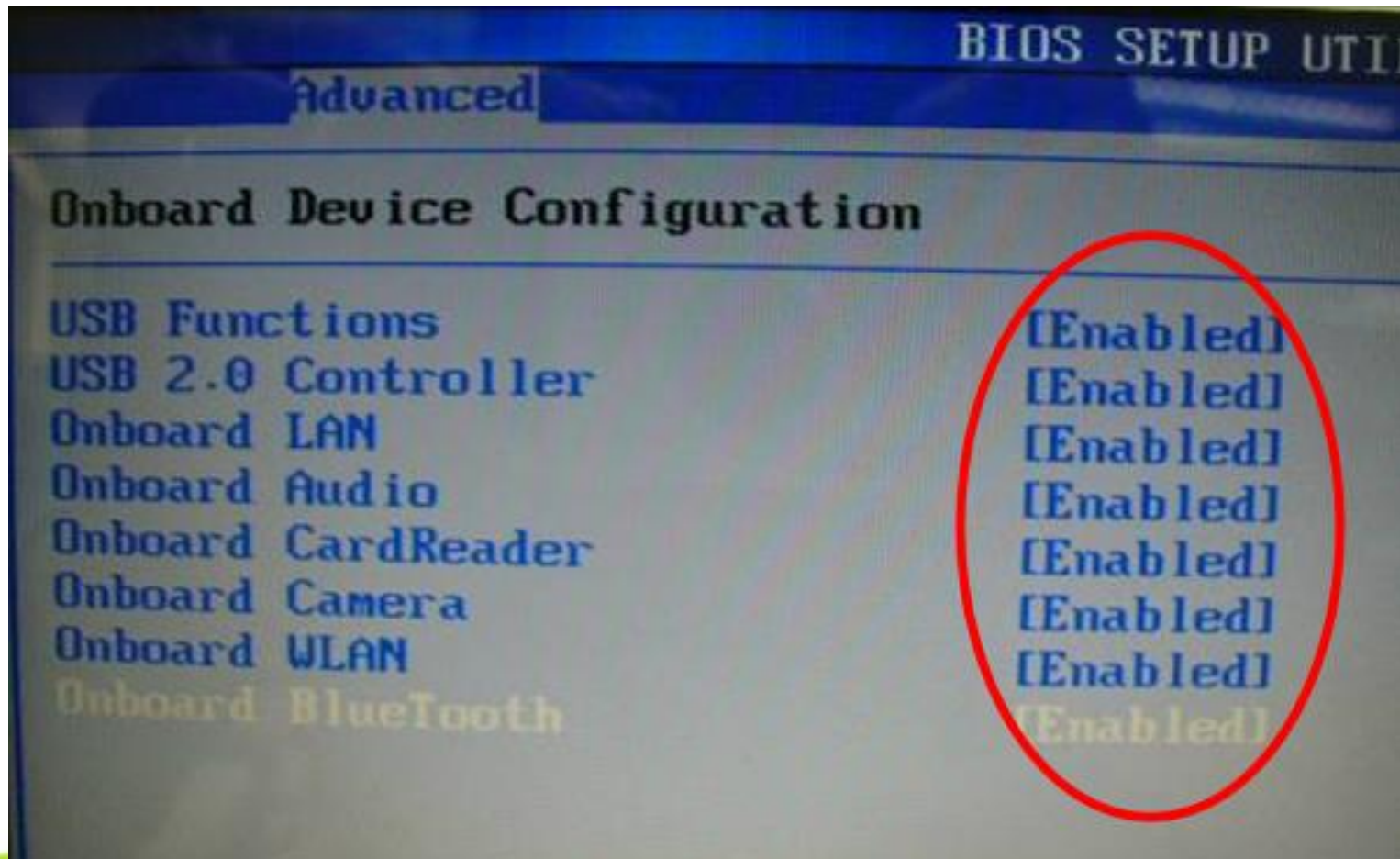
Step 4: New Model WTP Setup for Update: The New Model WTP Setup-for update will be release every week. It contains the WTP BIOS\_TXT and new model profile. Please download file and overwrite New Model WTP Setup-for update to WTP \ bin \.





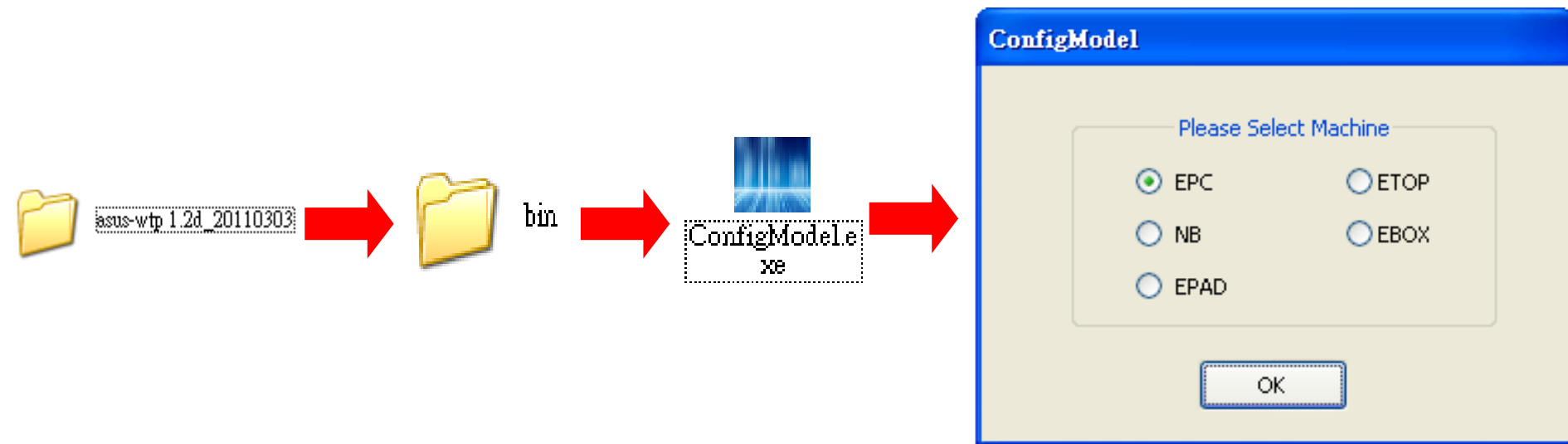
# Set for WTP Program

Step 1: BIOS Setup: Press F2 to the BIOS when unit booting on, load Setup Defaults and setup System Time/Date. Then enable all devices. Finally Save Changes and Exit. (System will reboot)



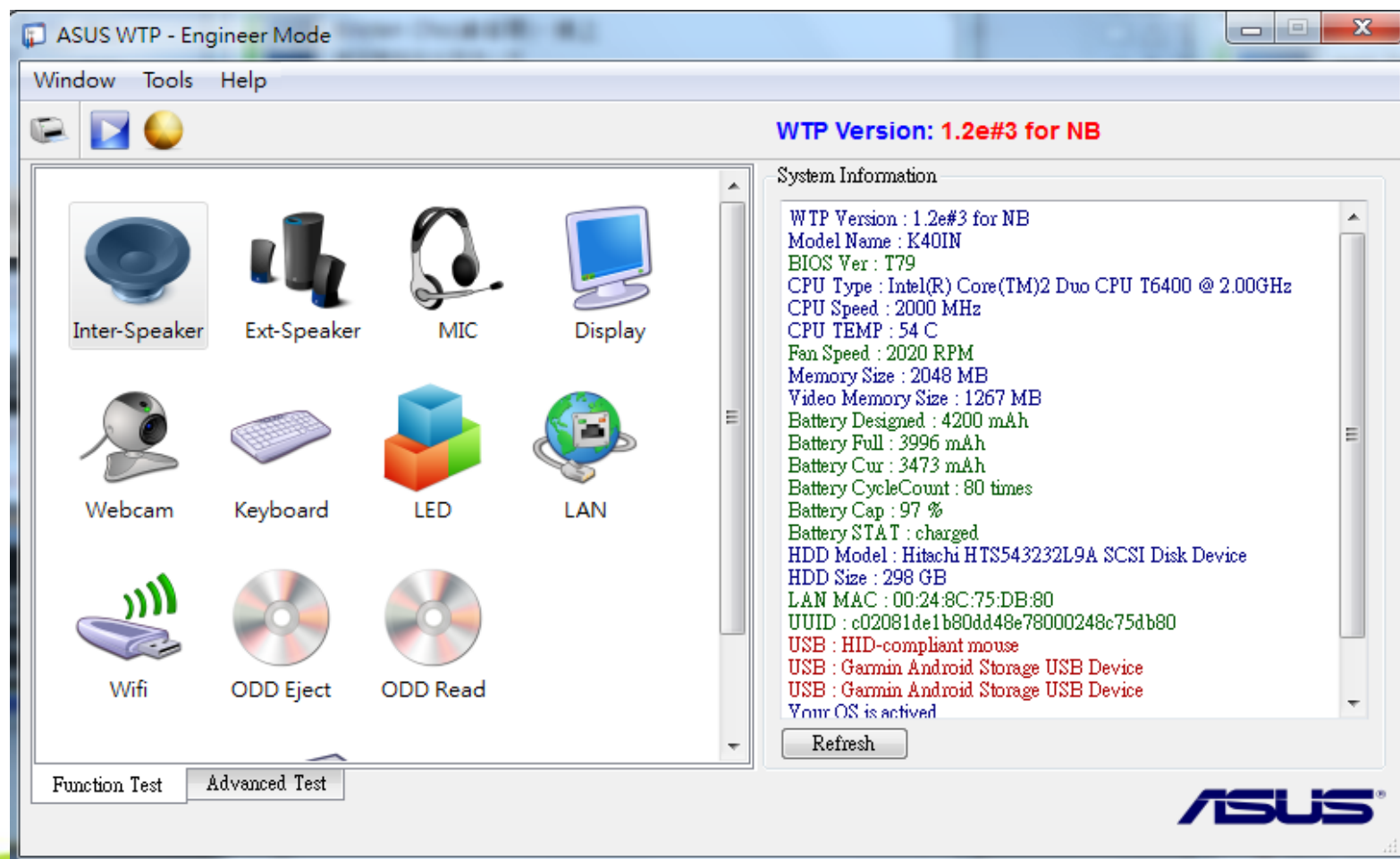
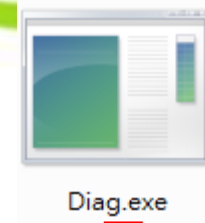
# Set for WTP Program

Step 2: **Product select** : Since the program supports multiple different products. Run "ConfigModel.exe" before "DiagEG.exe".



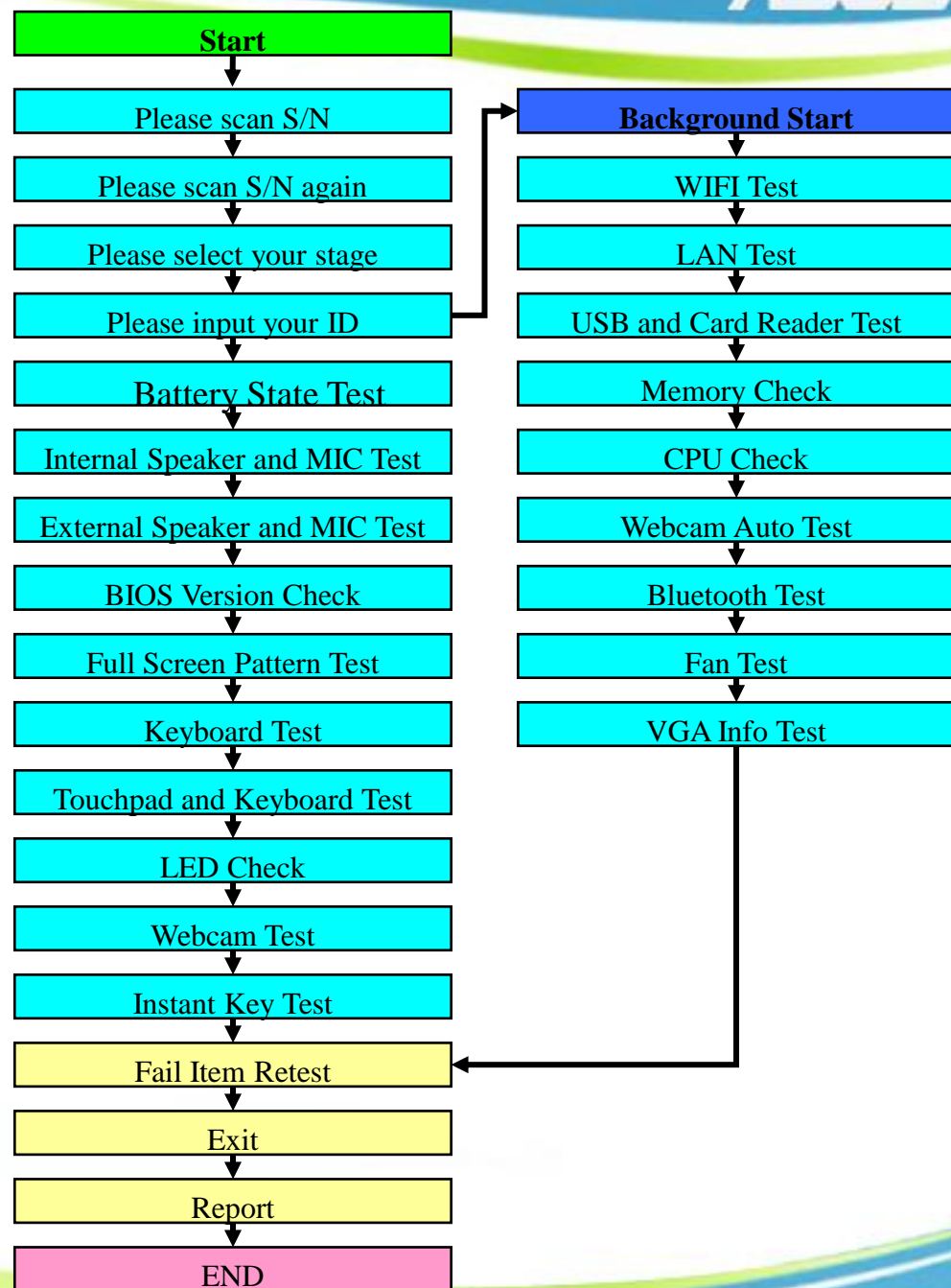
# WTP Main Menu

Step 1: Run DiagEG.exe on desktop



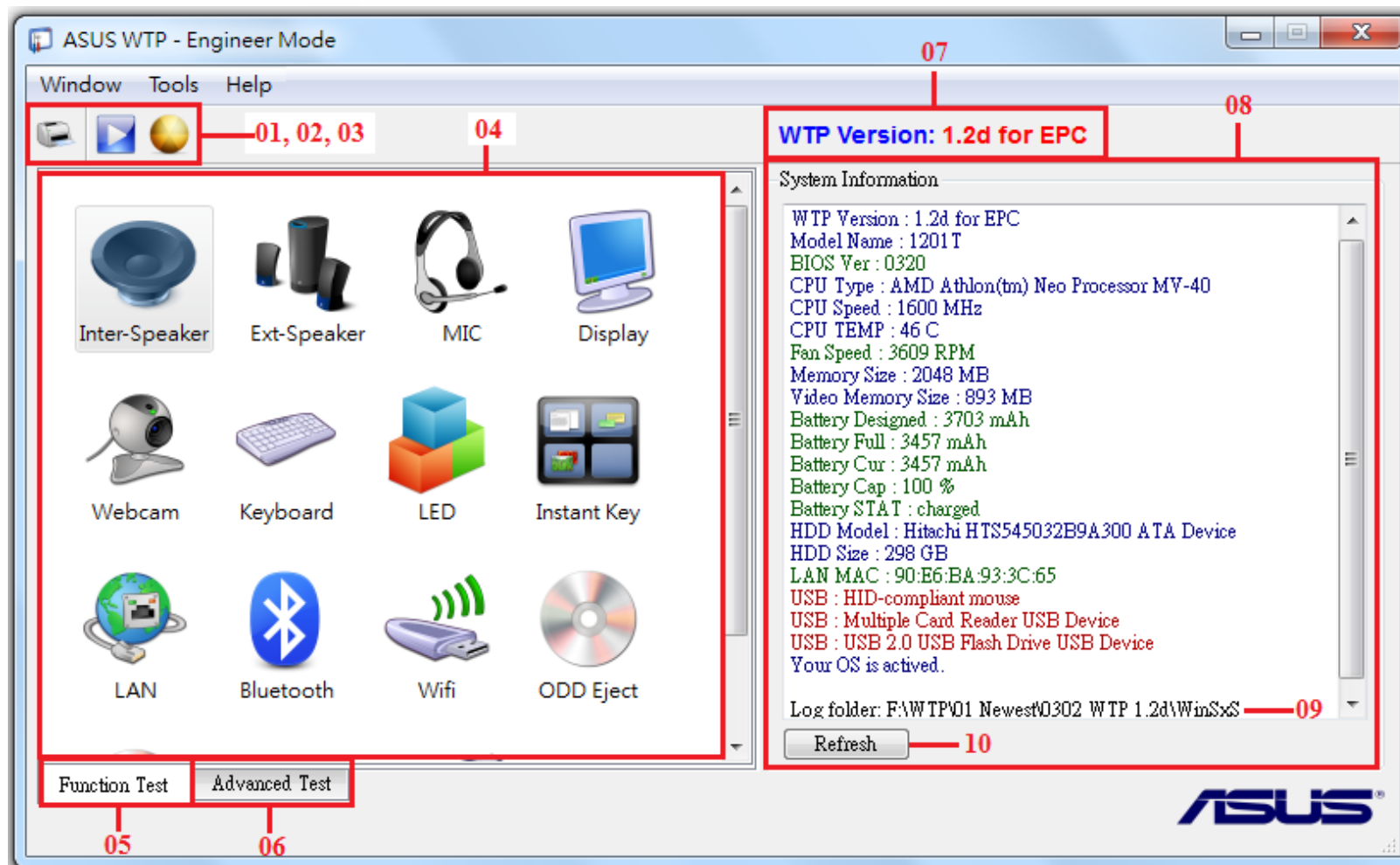
# WTP Test Flow

This is a test process sample.  
Test items need in accordance  
with the actual function.





# WTP Main Interface

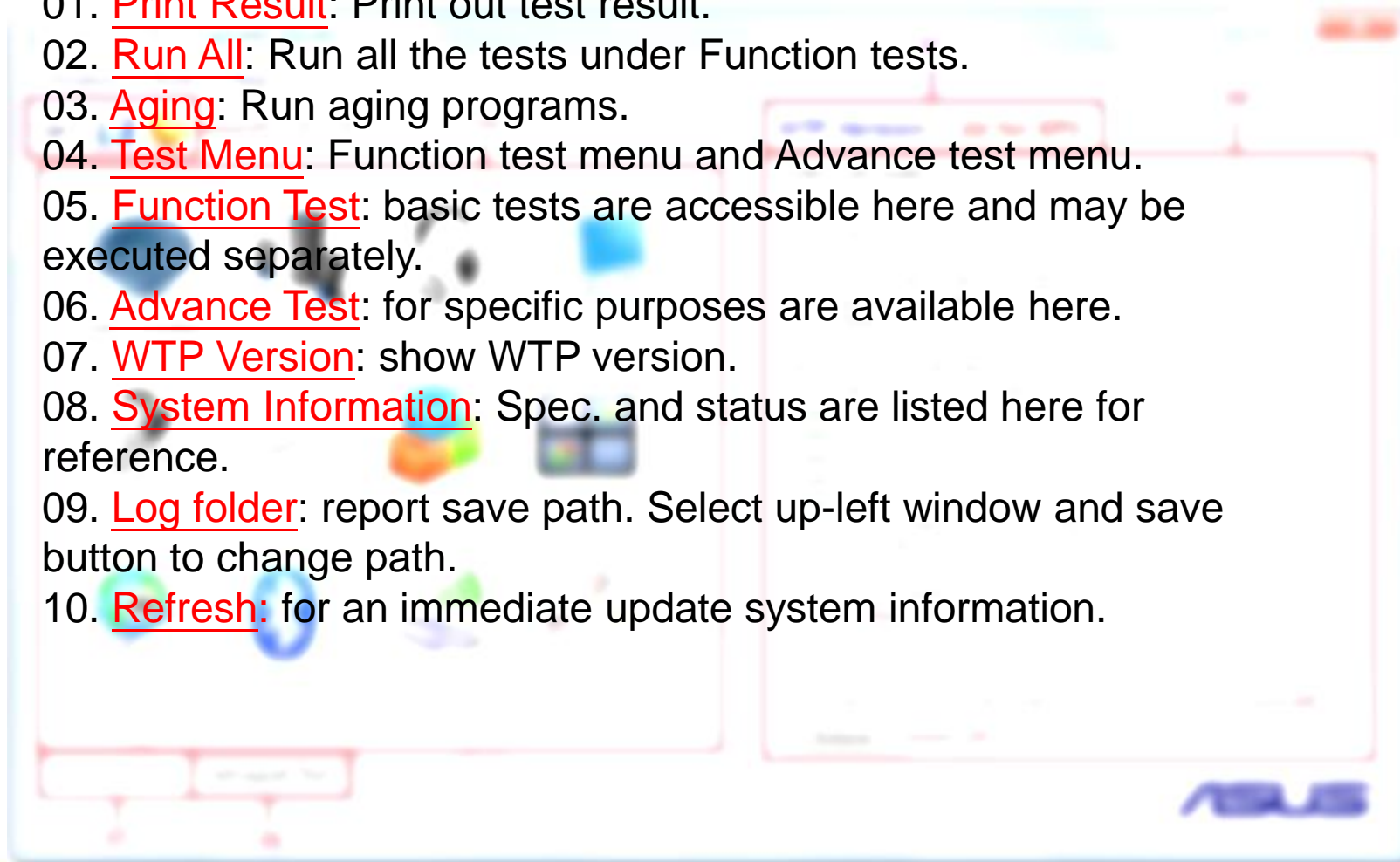


The next page will show each item.

# WTP Main Interface


Introduction for each item.

01. Print Result: Print out test result.
02. Run All: Run all the tests under Function tests.
03. Aging: Run aging programs.
04. Test Menu: Function test menu and Advance test menu.
05. Function Test: basic tests are accessible here and may be executed separately.
06. Advance Test: for specific purposes are available here.
07. WTP Version: show WTP version.
08. System Information: Spec. and status are listed here for reference.
09. Log folder: report save path. Select up-left window and save button to change path.
10. Refresh: for an immediate update system information.



# WTP Test Interface

ASUS WTP

 Ext Audio Test **08**

**Please press corresponding number on KB in left/right channel test**  
**Speak to machine in order to record sounds**  
**Press F10 to issue FAIL**


External left channel .....finished.  
 External right channel .....not start yet.  
 External MIC .....not start yet.

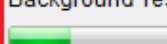
**FAIL** **01**

**00:57** **02**

**Error At**  
 Internal Speaker and Micro **03**

**Error Code**  
 OAZA04 **04**

**Interactive Test** **05**  
 2/8

**Background Test** **06**  
 3/8

**Exit** **07**

**ASUS**

☒ Battery State [PASS]  
☒ Int Speaker and MIC Test [FAIL]

Ext Audio Test  
 LCD Panel Test  
 KB and Touchpad Test **10**  
 LED Check  
 Webcam Test  
 Instant Key Check  
☒ Bluetooth Test [PASS]  
☒ CPU Check [PASS]

[BT] Start test  
 [Battery] Start Battery State test  
 [Audio] Start Internal Speaker/MIC test  
 [BT] Scanned at least one Bluetooth device  
 [CPU] Start check  
 [CPU] Max speed: 1600 MHz, Current speed: 1600 MHz  
 [CPU] FSB: 200 MHz, L2 Cache: 0 K  
 [CPU] BrandID: 0, Signature: FF2  
 [CPU] Temperature: 47  
 [Fan] Start test  
 [Fan] Current speed: 3582 rpm  
 [LAN] Start test

**09**

Test Result: FAIL

The next page will show each item.

# WTP Test Interface

Introduction for each item.

01. Test Result.
02. Test Time.
03. Error at where.
04. Error code.
05. Interactive Test state.
06. Background Test state.
07. Exit test program.
08. Current running inter active test.
09. Test state.
10. Test results are listed here:
  - a. Function tests determined by program and executed in the background automatically.
  - b. Function tests require human judgment and executed manually.





# WTP Test Interface

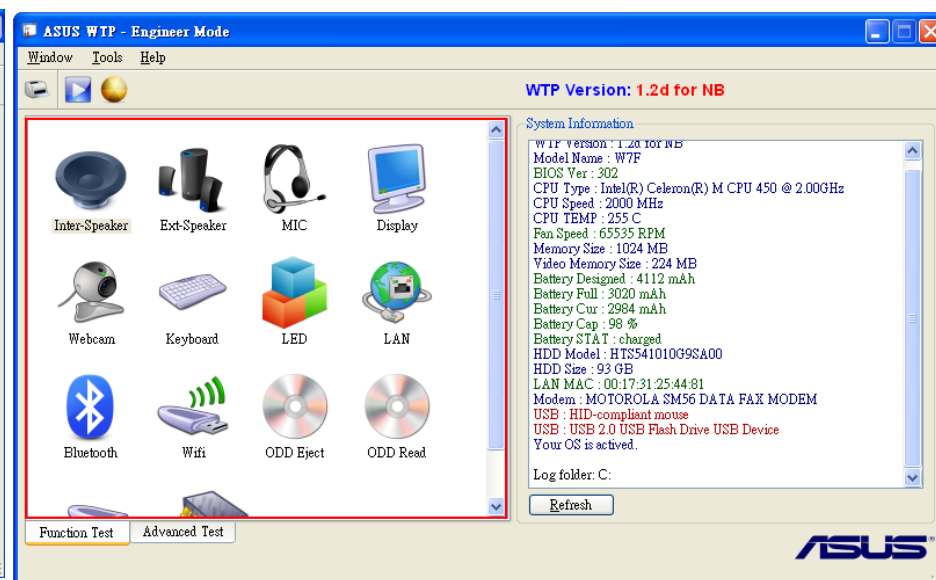
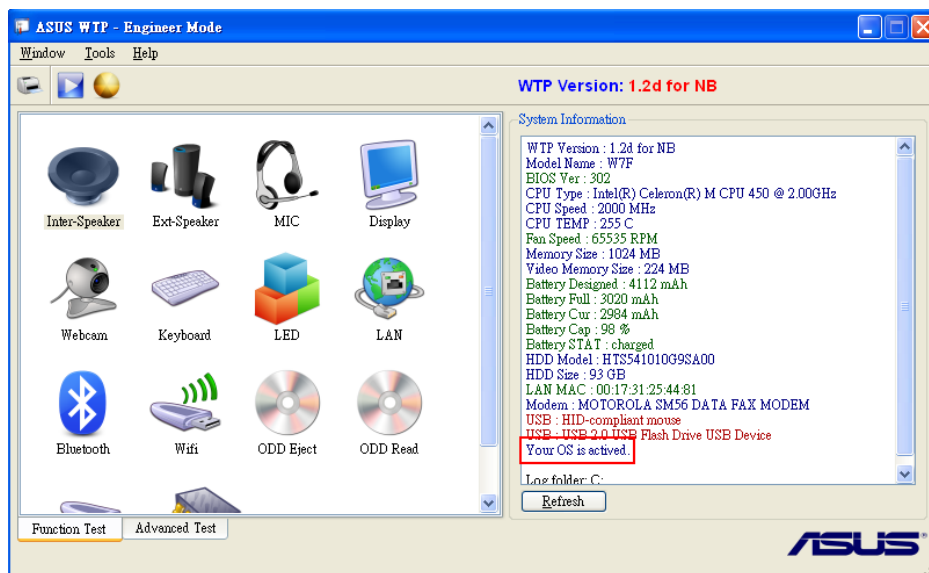
The program runs two kinds of tests at the same time. Some of the testing program can automatically detect what we call background test. Test items will be in accordance with the specifications of models change.

## Single Test

Basic tests are accessible here and may be executed separately

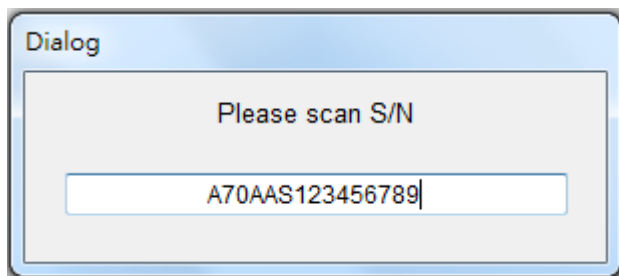
## All Test

You can select “Run All” button to test all function.



# Scan/Stage

Scan or key in the S/N, select the repair stage, type in the employee ID.

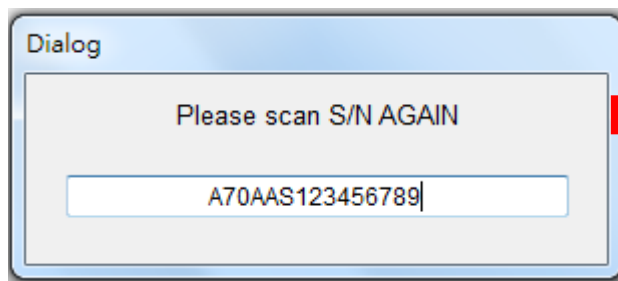


Dialog

Please scan S/N

A70AAS123456789

Scan the S/N of the product  
(15-digit maximum)

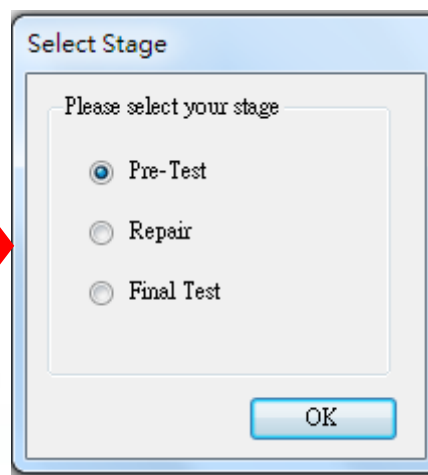


Dialog

Please scan S/N AGAIN

A70AAS123456789

Scan the S/N of the product  
again.



Select Stage

Please select your stage

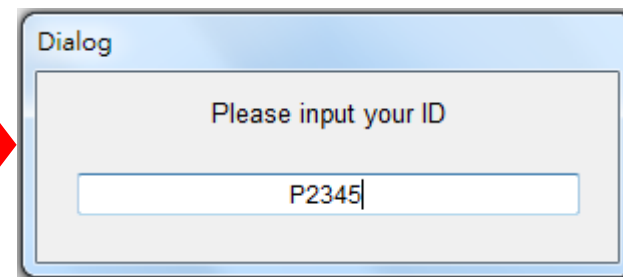
☒ Pre-Test

☐ Repair

☐ Final Test

OK

Select the stage and press OK.



Dialog

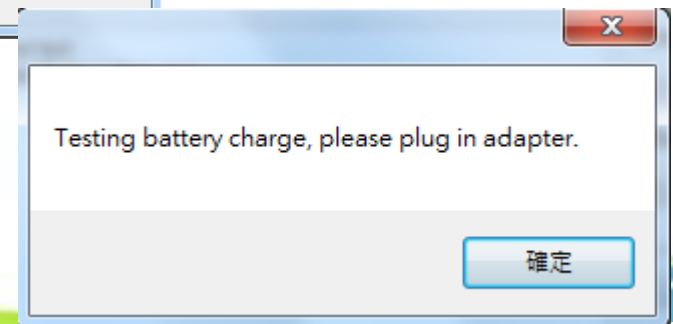
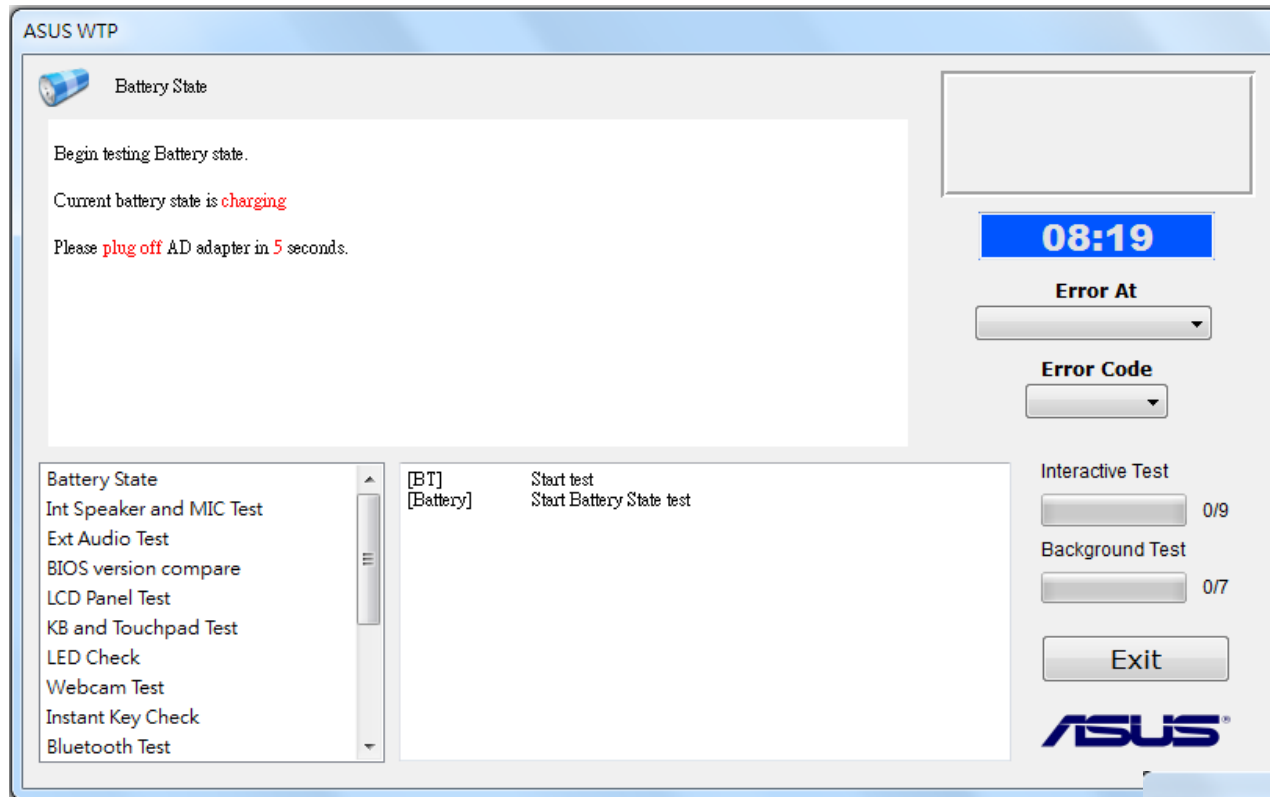
Please input your ID

P2345

Type in the your employee ID.

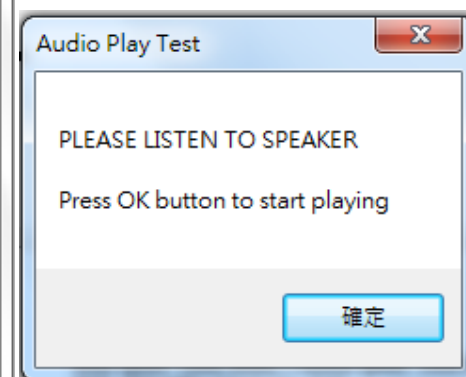
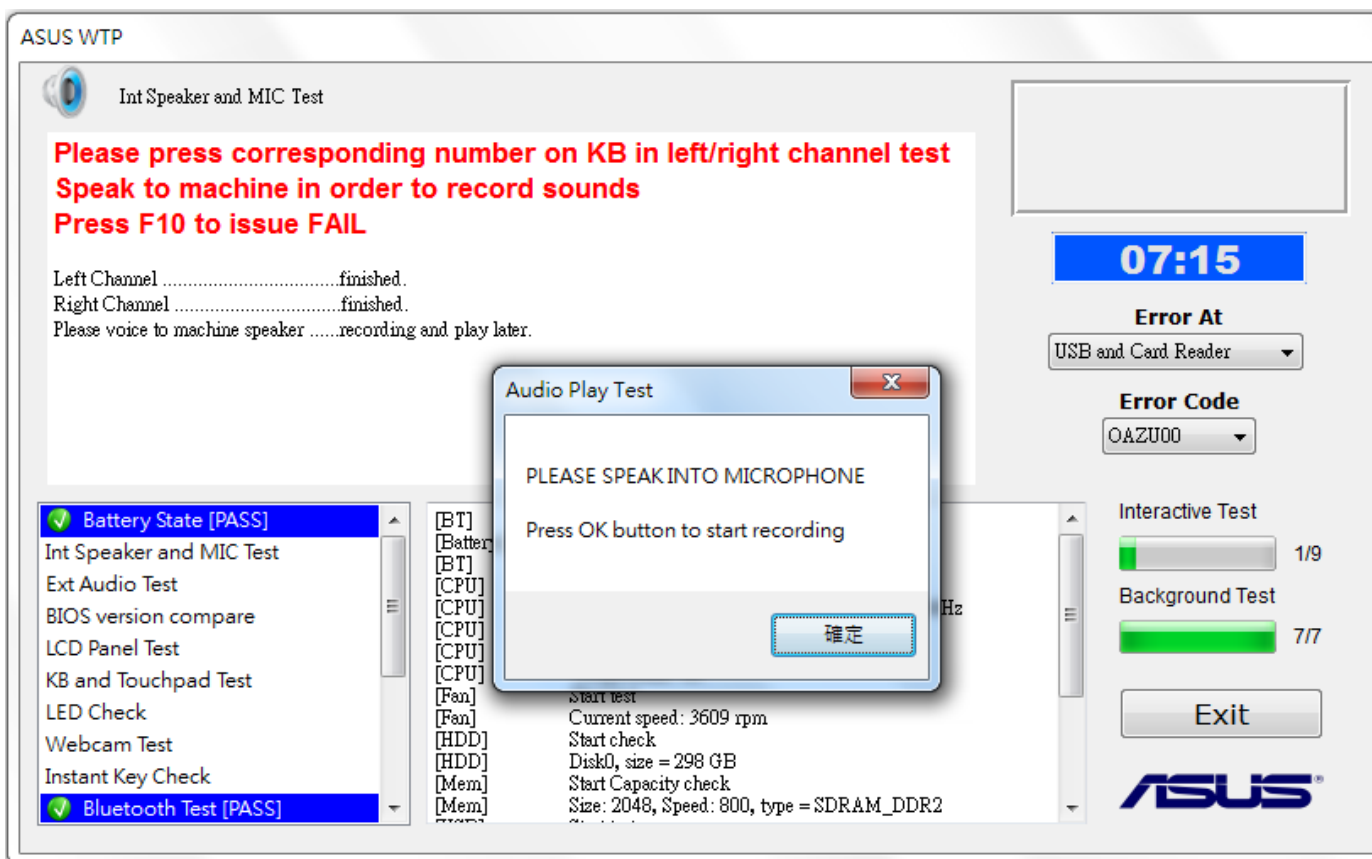
# Battery Test

Please follow the instructions to plug or plug off adapter in 10 seconds.



# Internal Speaker and Microphone Test

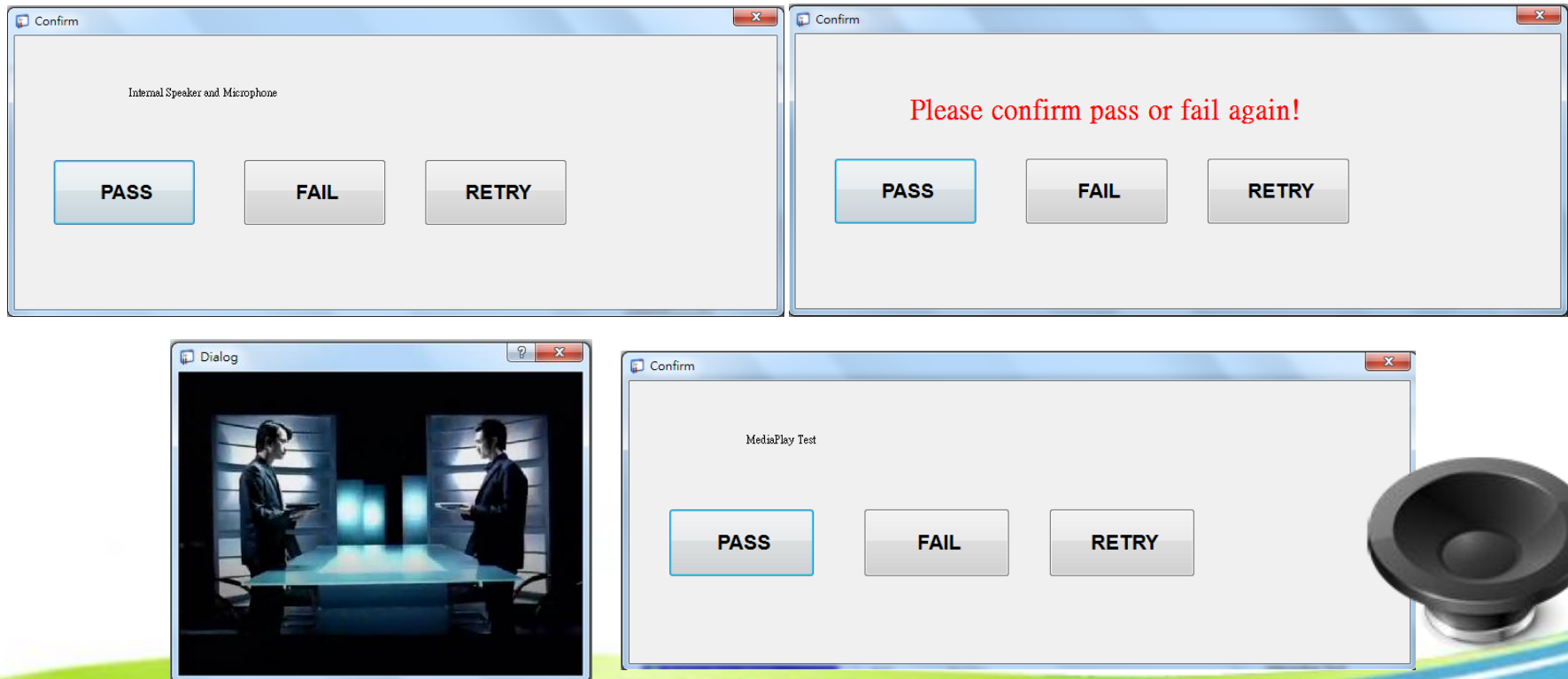
1. You can press **F10** to trigger a **FAIL** at any time.
2. **Left channel test**: Listen to the voice and press the number on the keyboard.
3. **Right channel test**: Listen to the voice and press the number on the keyboard.





# Internal Speaker and Media Test

4. Microphone Test: Please speak into microphone and press ok button to recording. Please listen to speaker and press ok button start playing.
5. Manually press PASS, FAIL, and RETRY depending on the result. If select "FAIL", you must confirm again to avoid a wrong choice.
6. Media play test: You can test internal speaker noise by Media play test.



# External Audio Test



ASUS WTP

Ext Audio Test

**Please press corresponding number on KB in left/right channel test  
Speak to machine in order to record sounds  
Press F10 to issue FAIL**

External left channel .....not start yet.  
External right channel .....not start yet.  
External MIC .....not start yet.

**33:36**

**Error At**  
USB and Card Reader

**Error Code**  
OAZU00

**Interactive Test**  
2/9

**Background Test**  
7/7

**Exit**

**ASUS**

**Information**

Press 'OK' to start Manual external audio test.

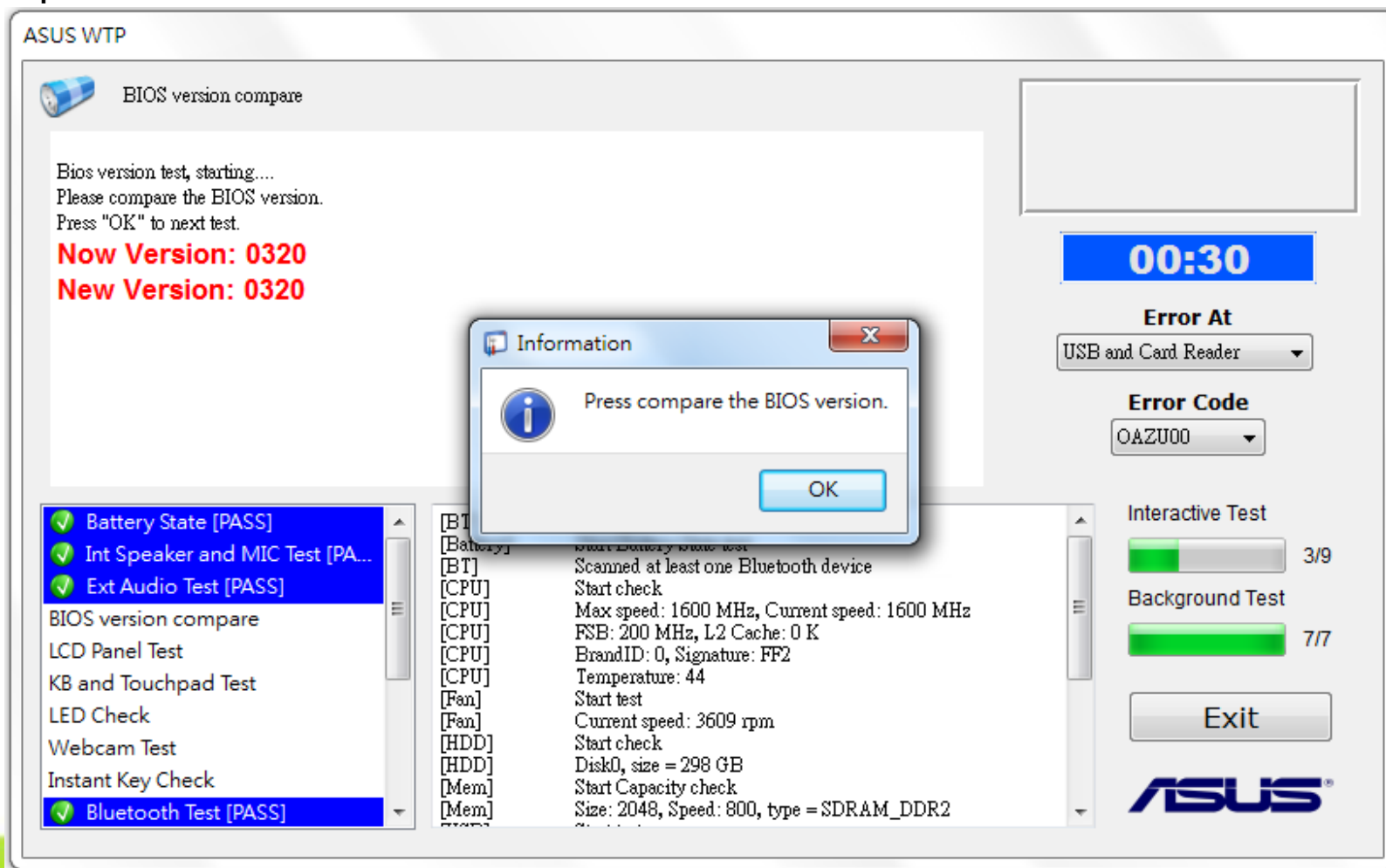
**OK**

Battery State [PASS]  
Int Speaker and MIC Test [PA...  
Ext Audio Test  
BIOS version compare  
LCD Panel Test  
KB and Touchpad Test  
LED Check  
Webcam Test  
Instant Key Check  
Bluetooth Test [PASS]

[CPU] Max speed: 1600 MHz, Current speed: 1600 MHz  
[CPU] FSB: 200 MHz, L2 Cache: 0 K  
[CPU] BrandID: 0, Signature: FF2  
[CPU] Temperature: 44  
[Fan] Start test  
[Fan] Current speed: 3609 rpm  
[HDD] Start check  
[HDD] Disk0, size = 298 GB  
[Mem] Start Capacity check  
[Mem] Size: 2048, Speed: 800, type = SDRAM\_DDR2

# BIOS Version Check

You can compare the older BIOS version and new version in screen. The BIOS check list will release every week on SIP. Please overwrite BIOS\_TXT to WTP \ bin \ conf \ or overwrite New Model WTP Setup-for update to WTP \ bin \.



# LCD Panel Test

Screen displays black, white and bands of color for examining the quality of LCD panel. Please press space key for next test. Manually press PASS, FAIL, and RETRY depending on the result. If select "FAIL", you must confirm again to avoid a wrong choice.



ASUS WTP

**LCD Panel Test**

The screen will remain black, white and color sequentially for seconds to allow you check the specific pixels.

**29:33**

**Error At**  
USB and Card Reader

**Error Code**  
OAZU00

**Interactive Test**  
4/9

**Background Test**  
7/7

**Exit**

**ASUS**

**Information**

Press 'OK' to start LCD panel test.  
Press space key for next test

**OK**

Battery State [PASS]  
Int Speaker and MIC Test [PASS]  
Ext Audio Test [PASS]  
BIOS version compare [PASS]  
LCD Panel Test  
KB and Touchpad Test  
LED Check  
Webcam Test  
Instant Key Check  
Bluetooth Test [PASS]

[BT] Scanned at least one Bluetooth device  
[CPU] Start check  
[CPU] Max speed: 1600 MHz, Current speed: 1600 MHz  
[CPU] FSB: 200 MHz, L2 Cache: 0 K  
[CPU] BrandID: 0, Signature: FF2  
[CPU] Temperature: 44  
[Fan] Start test  
[Fan] Current speed: 3609 rpm  
[HDD] Start check  
[HDD] Disk0, size = 298 GB  
[Mem] Start Capacity check  
[Mem] Size: 2048, Speed: 800, type = SDRAM\_DDR2

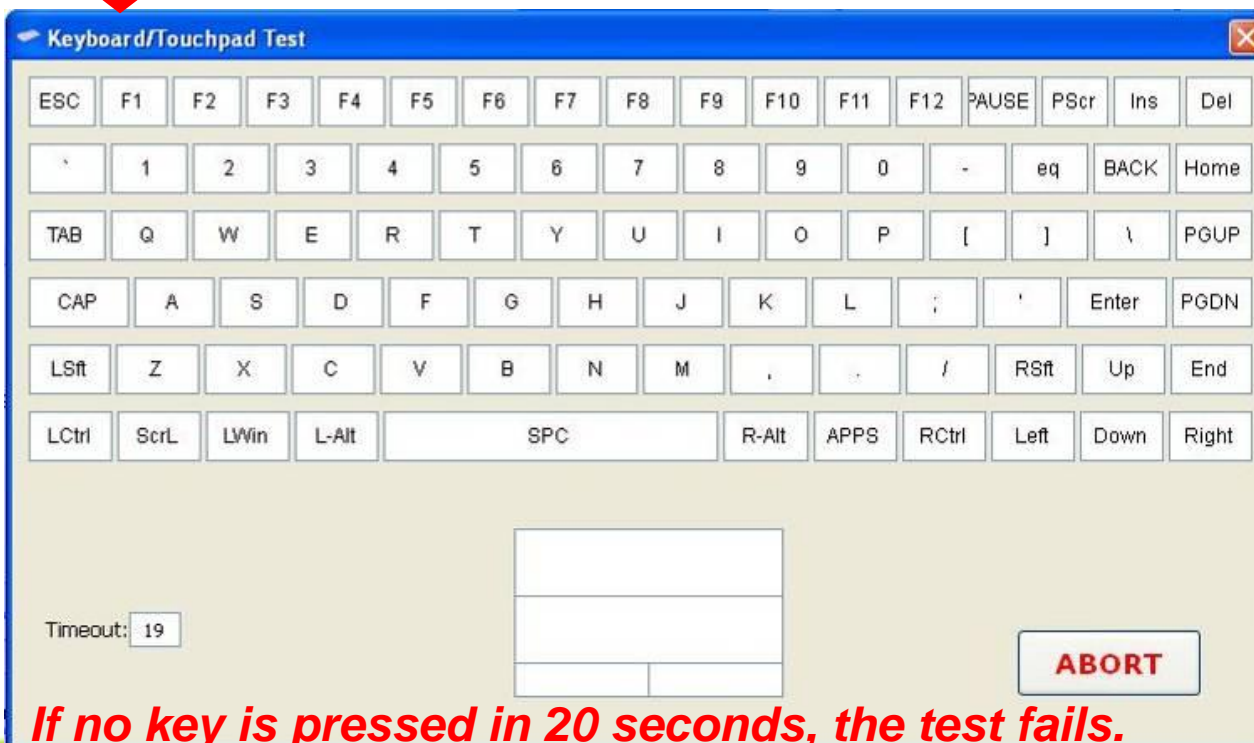


# Keyboard Test



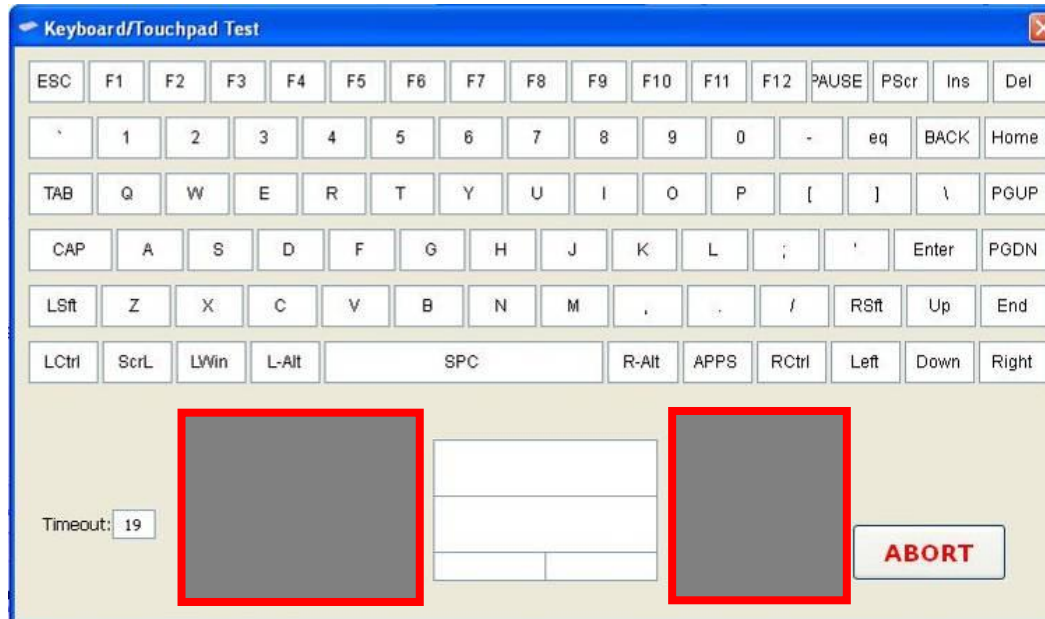
Please select the language.

Click all the keys on the keyboard.  
For [Fn] key on the left, press [Fn] and [Del].  
For [Fn] key on the right, press [Fn] and [Ins].



# Touchpad Test

Move the cursor to the gray blocks.

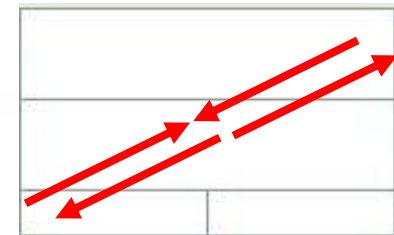
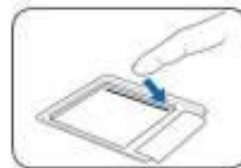
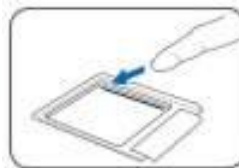


Try to test in different directions if by finger.

Scroll up and down with two fingers.

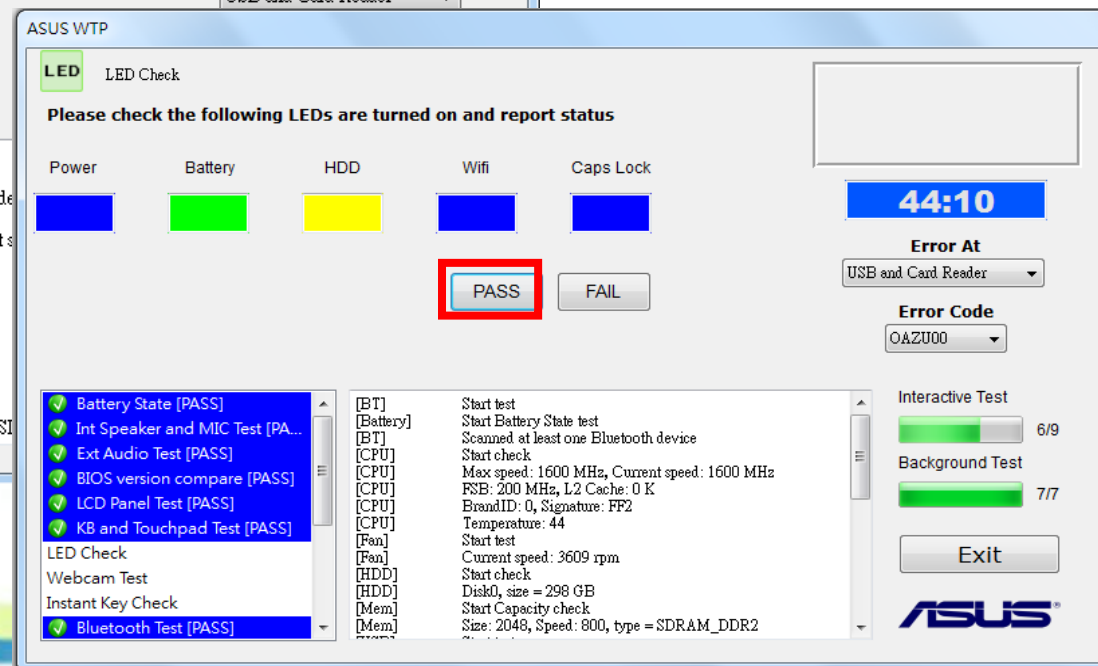
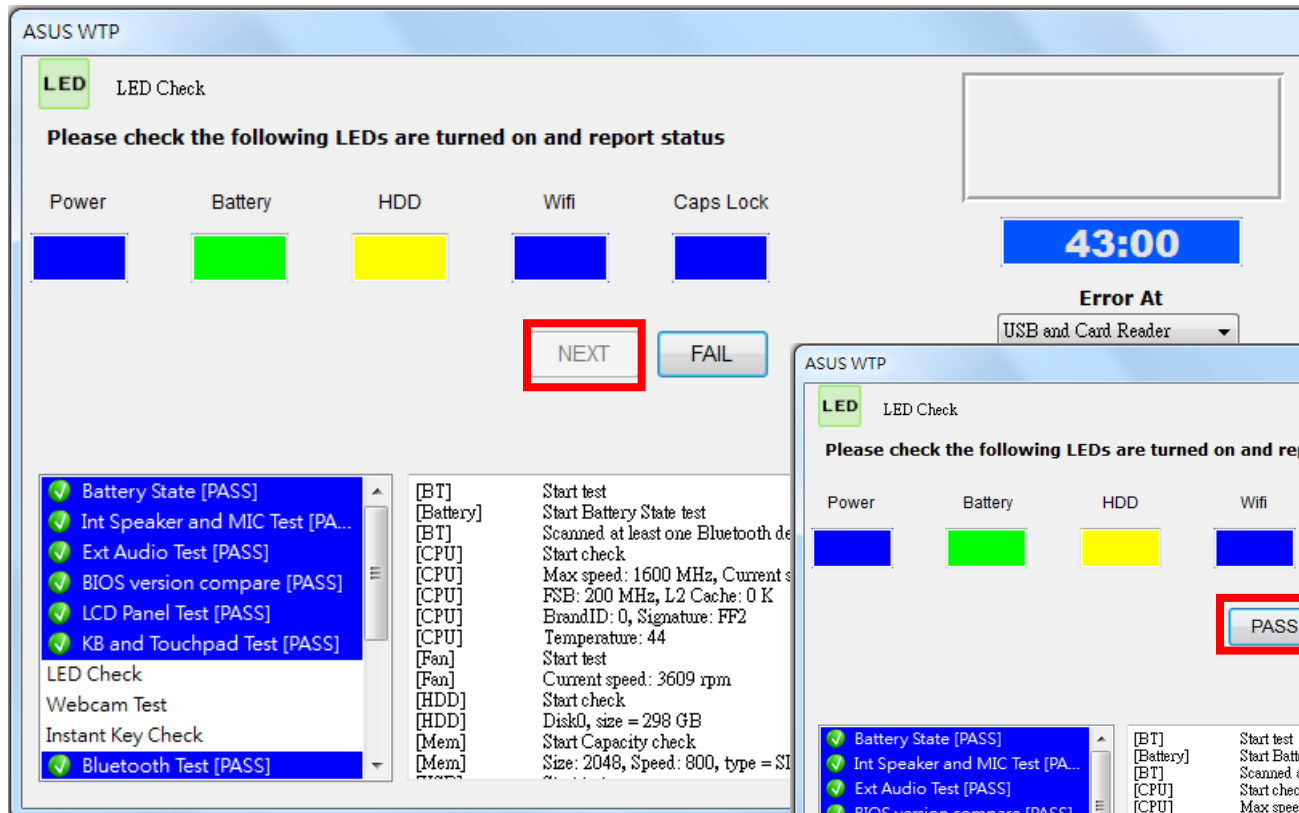
Two fingers to actually touch the Touchpad.

Scroll up and down in the middle.



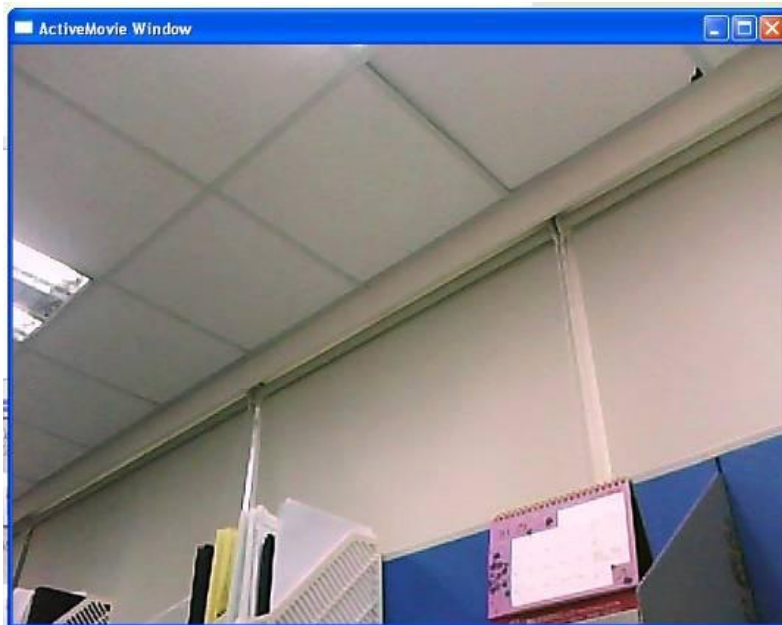
# LED Test

Press “Next” button and watch the LED make sure they blink.  
If the LED does not light up, press fail and may repeat the test again to ensure the LED actually failed. Once the LED’s entire are checked, press PASS button to end the test.



# Webcam Test

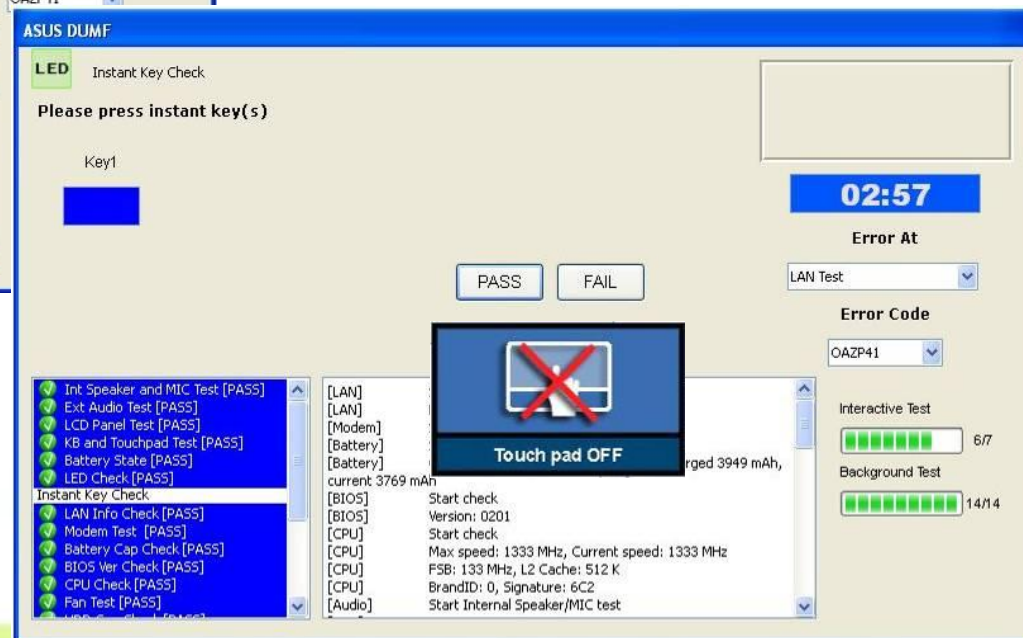
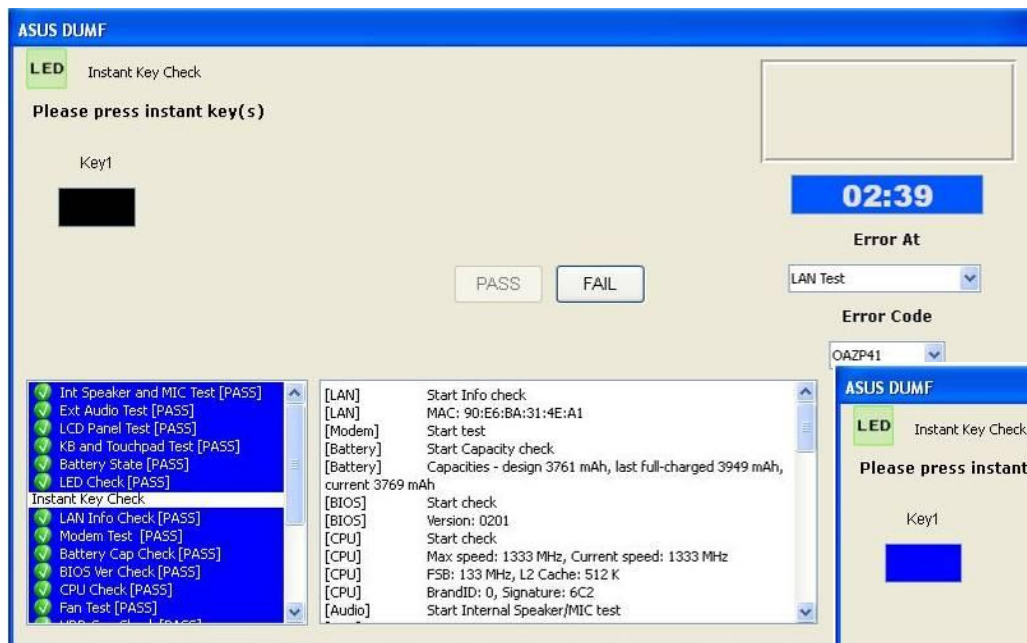
Once the image shows up, please wait 5 seconds to end the test. If single test, please press space key to end the test. Manually press PASS, FAIL, and RETRY depending on the result. If select "FAIL", you must confirm again to avoid a wrong choice.





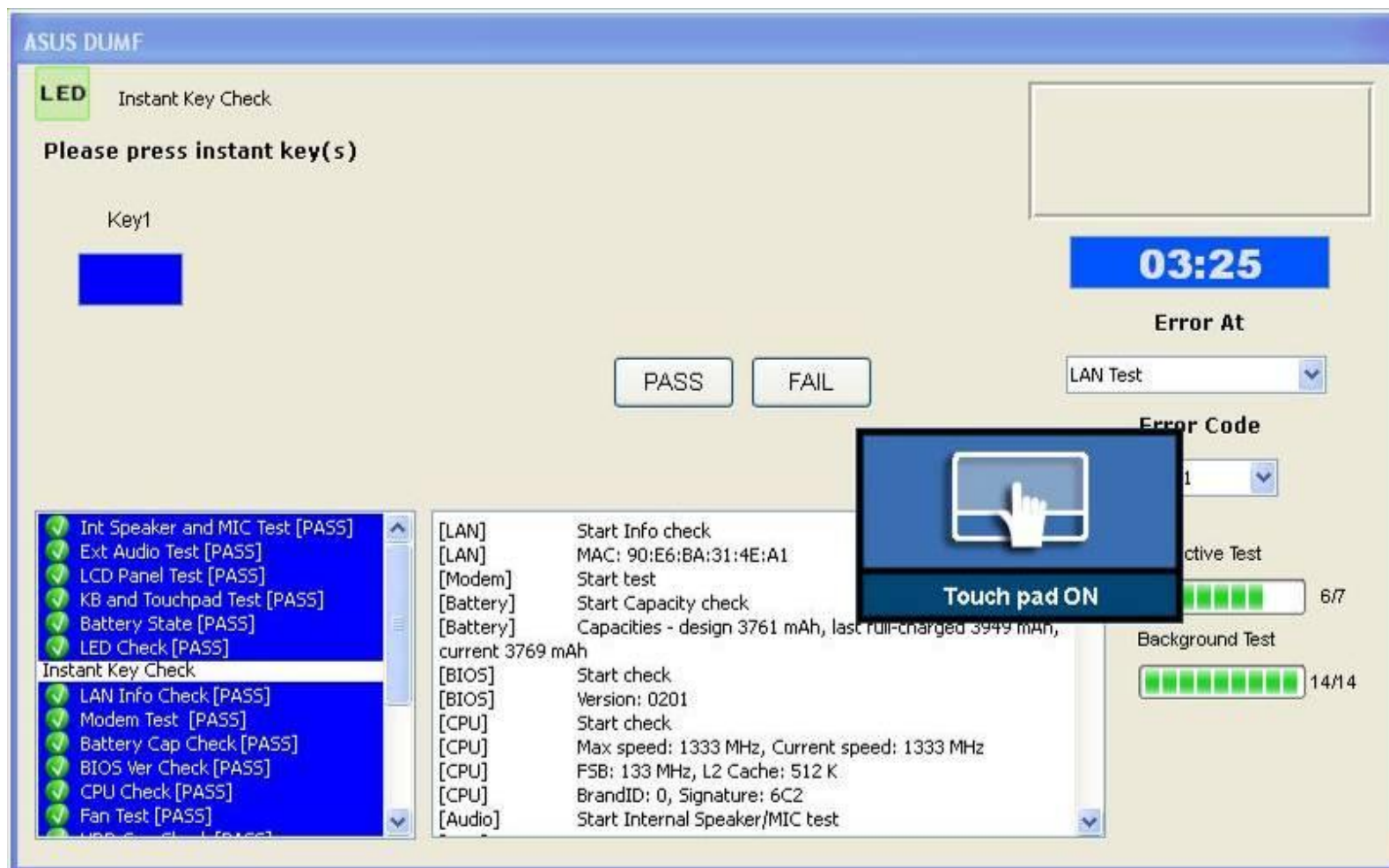
# Instant Key Test

Press the instant keys and make sure the color turns from black to blue. Once all the keys are checked, press PASS to end the test.



# Instant Key Test

Press the instant keys again to turn touch pad on.

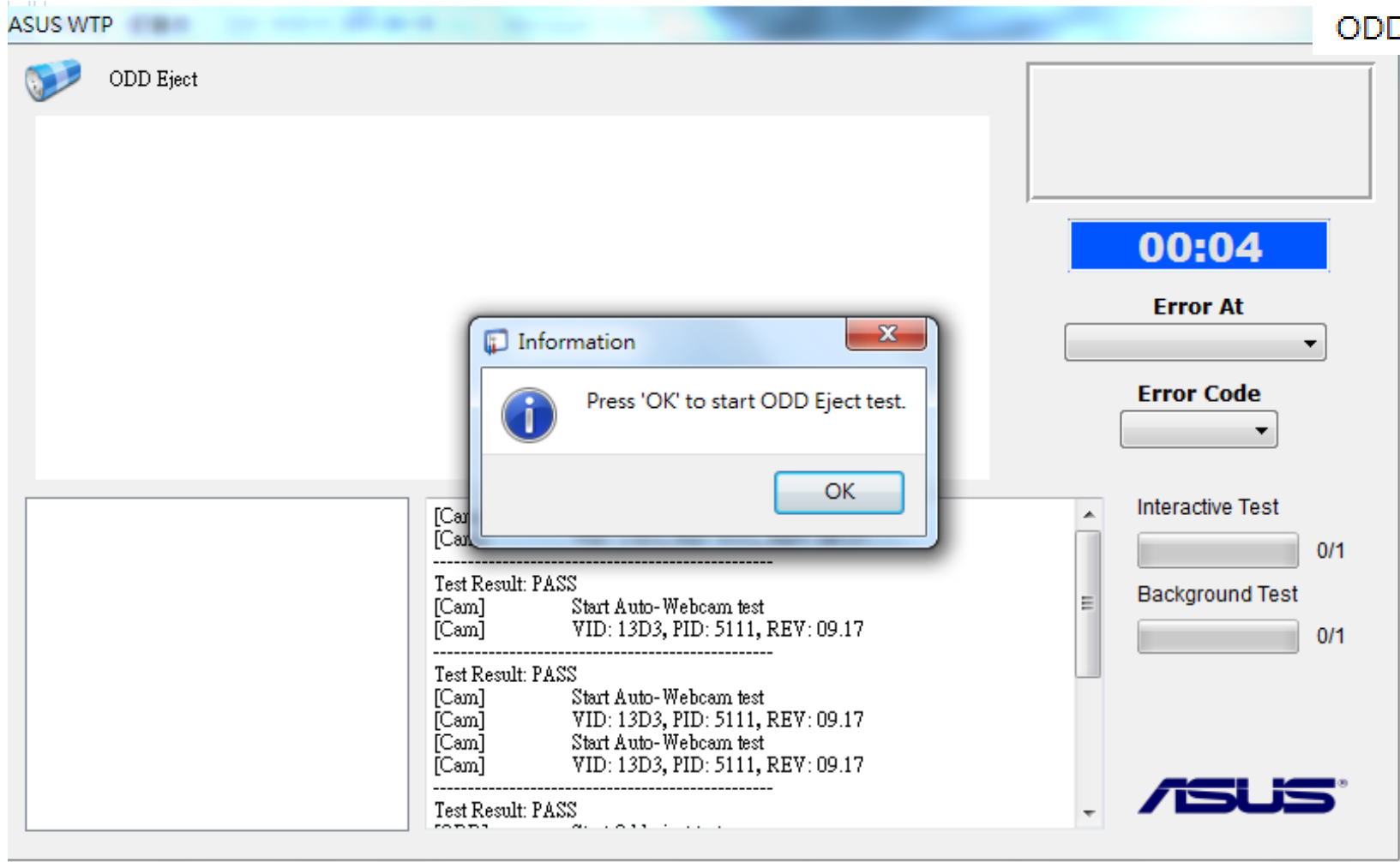


# ODD Test

ODD Eject test: Need have ODD and only test eject function.

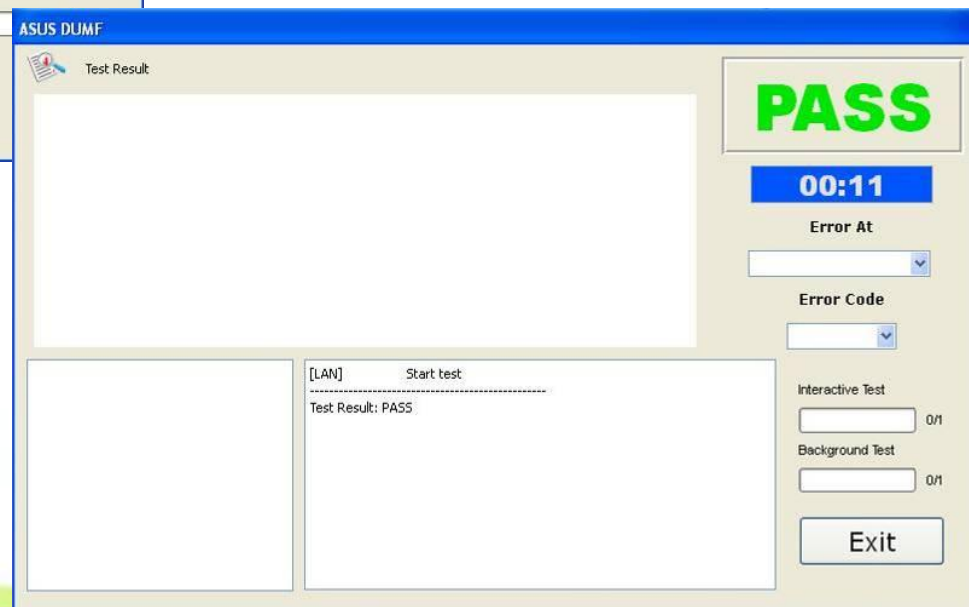
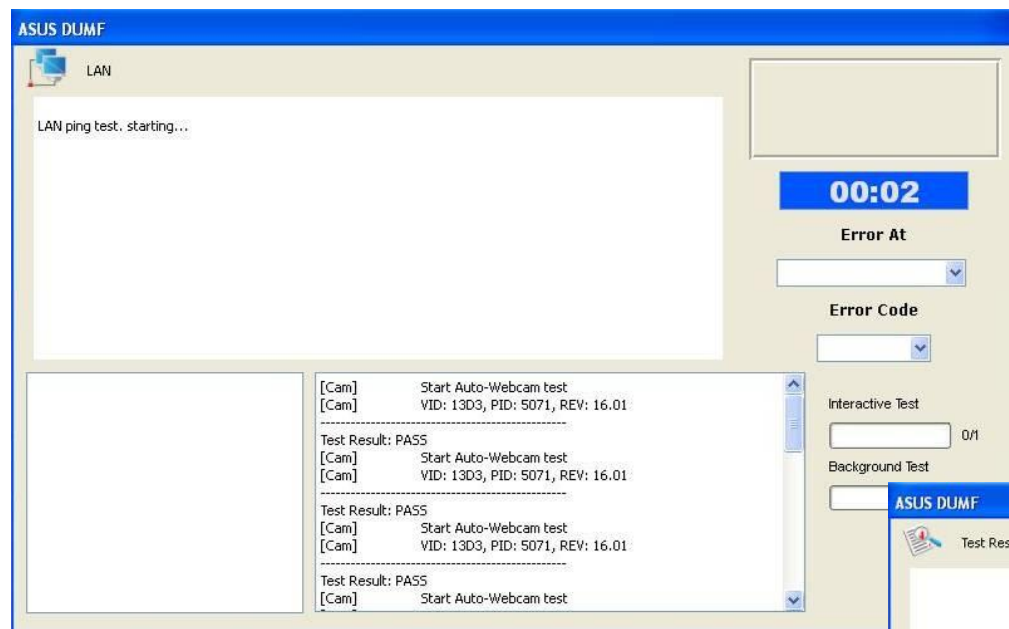


ODD Eject



# LAN Test

Make sure the machine is (wired) connected directly to the test AP or under the same network domain with the test AP.





# WIFI Test

Make sure to setup the AP with SSID as "tc test" without encryption before performing the test.



ASUS DUMF

WIFI

Wifi ping test, starting....

00:02

Error At

Error Code

Interactive Test 0/1

Background Test

[Wifi] Start test

ASUS DUMF

Test Result

**PASS**

00:12

Error At

Error Code

Interactive Test 0/1

Background Test 0/1

Exit

[LAN] Start test

Test Result: PASS

[LAN] Start test

Test Result: PASS

[LAN] Start test

Test Result: PASS

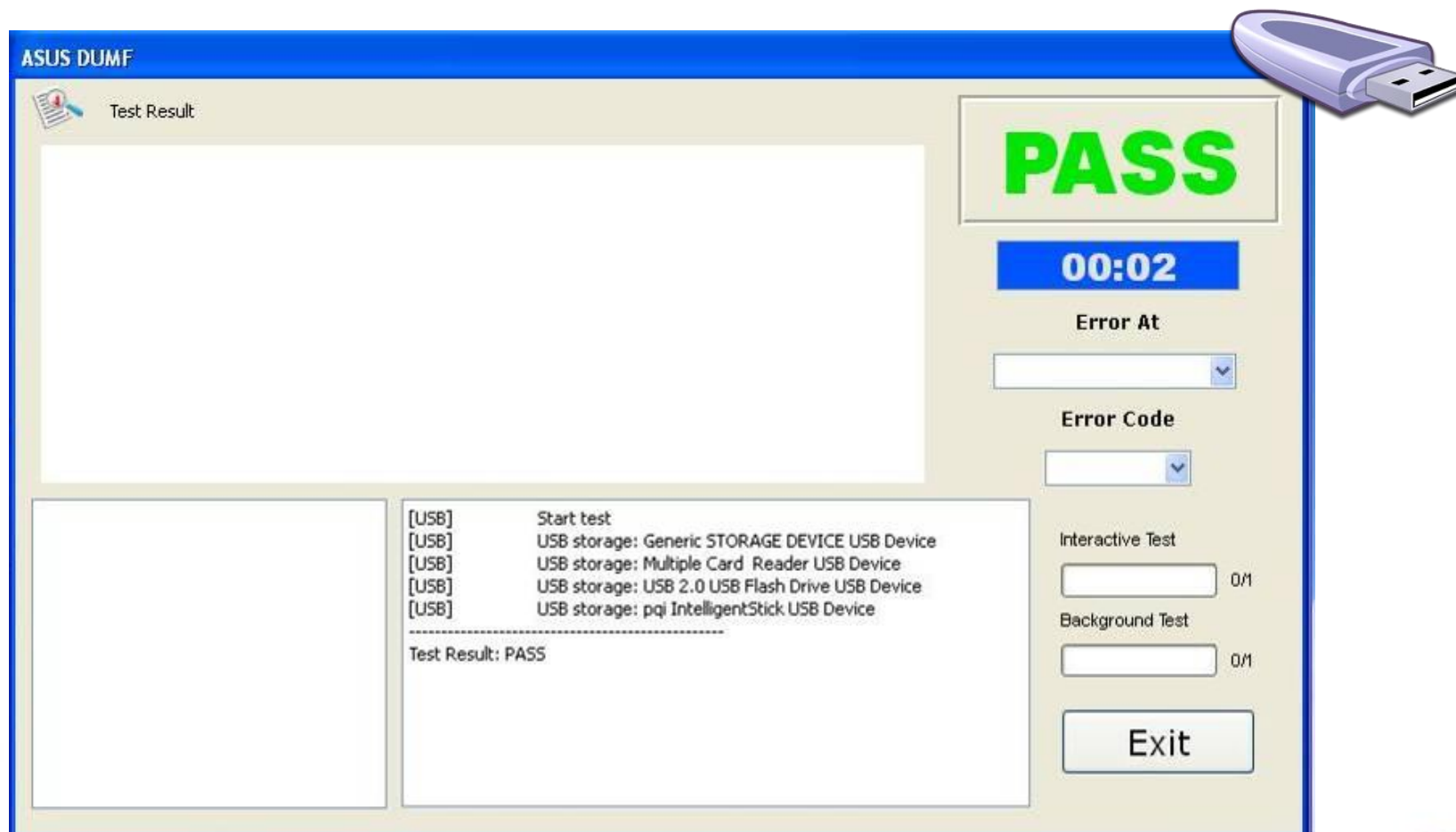
[Wifi] Start test

Test Result: PASS

[LAN] Start test

# USB/ Card Reader Test


To test the USB ports and card reader, make sure all the USB ports are occupied with USB memory drives (USB Flash, USB mouse...etc). Also, make sure a memory card is placed in the card reader.



# Bluetooth Test

Bluetooth start searching for other Bluetooth devices. Make sure there are at least one Bluetooth device around is active.

ASUS DUMF

 Test Result

**PASS**

**00:30**

Error At

Error Code

Interactive Test  
 0/1

Background Test  
 0/1

Exit

ASUS

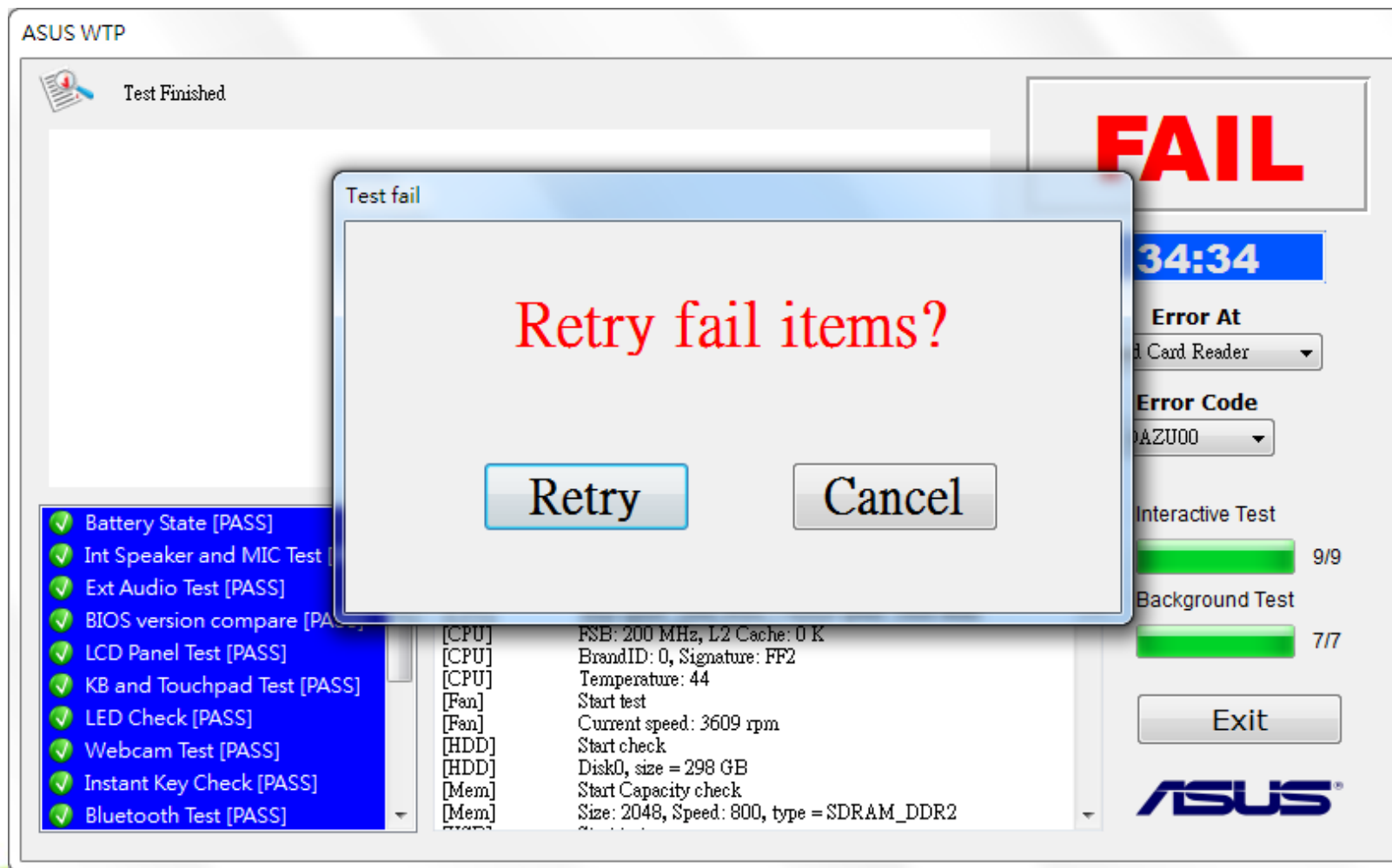
[BT] Start test  
[BT] Scanned at least one Bluetooth device

---

Test Result: PASS

# Fail Items Retry

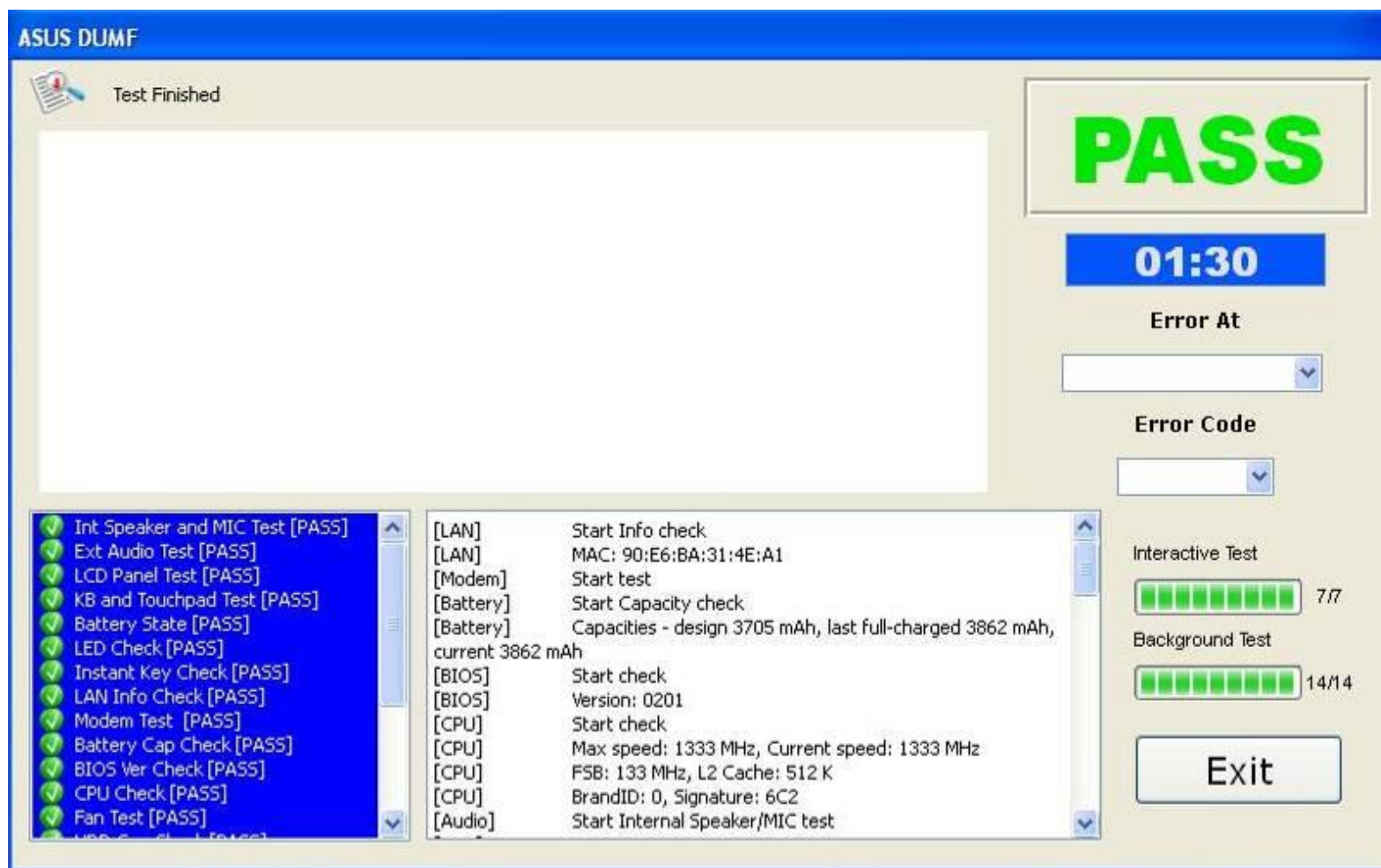
If “Run All” has tested fail item, when finish all test, it will show below screen. Please select “Retry” to test fail item again, or select “Cancel” to ignore.





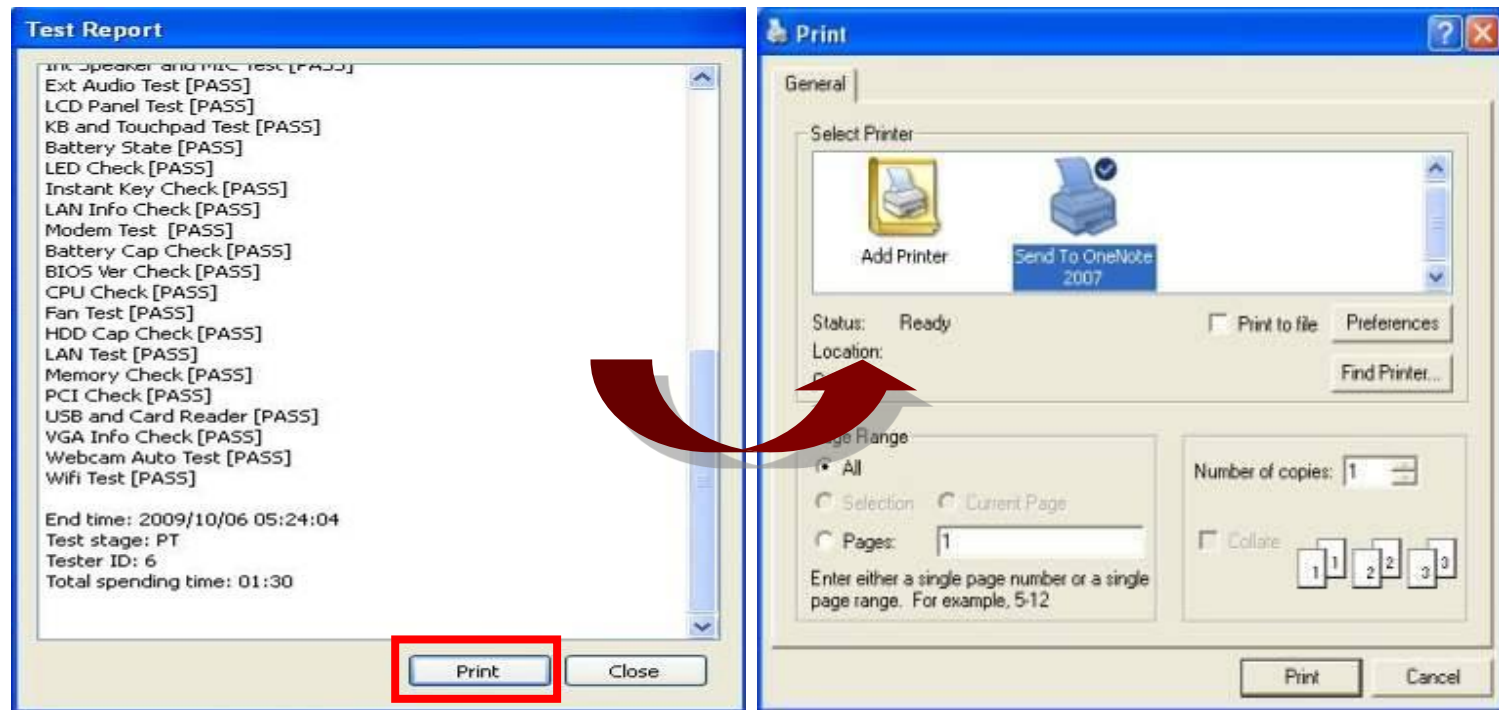
# Test Report

If all tests pass, it will show below picture. Press “Exit” button end of the test program.

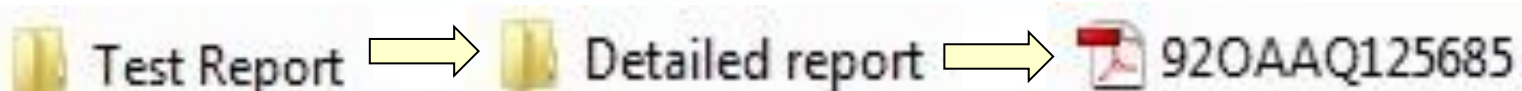


# Test Report

Test result is listed here with PASS or FAIL recorded. Press “Print” to print out the result or “Close” to close the window. If you “Close”, report will auto save. Please refer setup ([10.2 Setting report save path](#)).

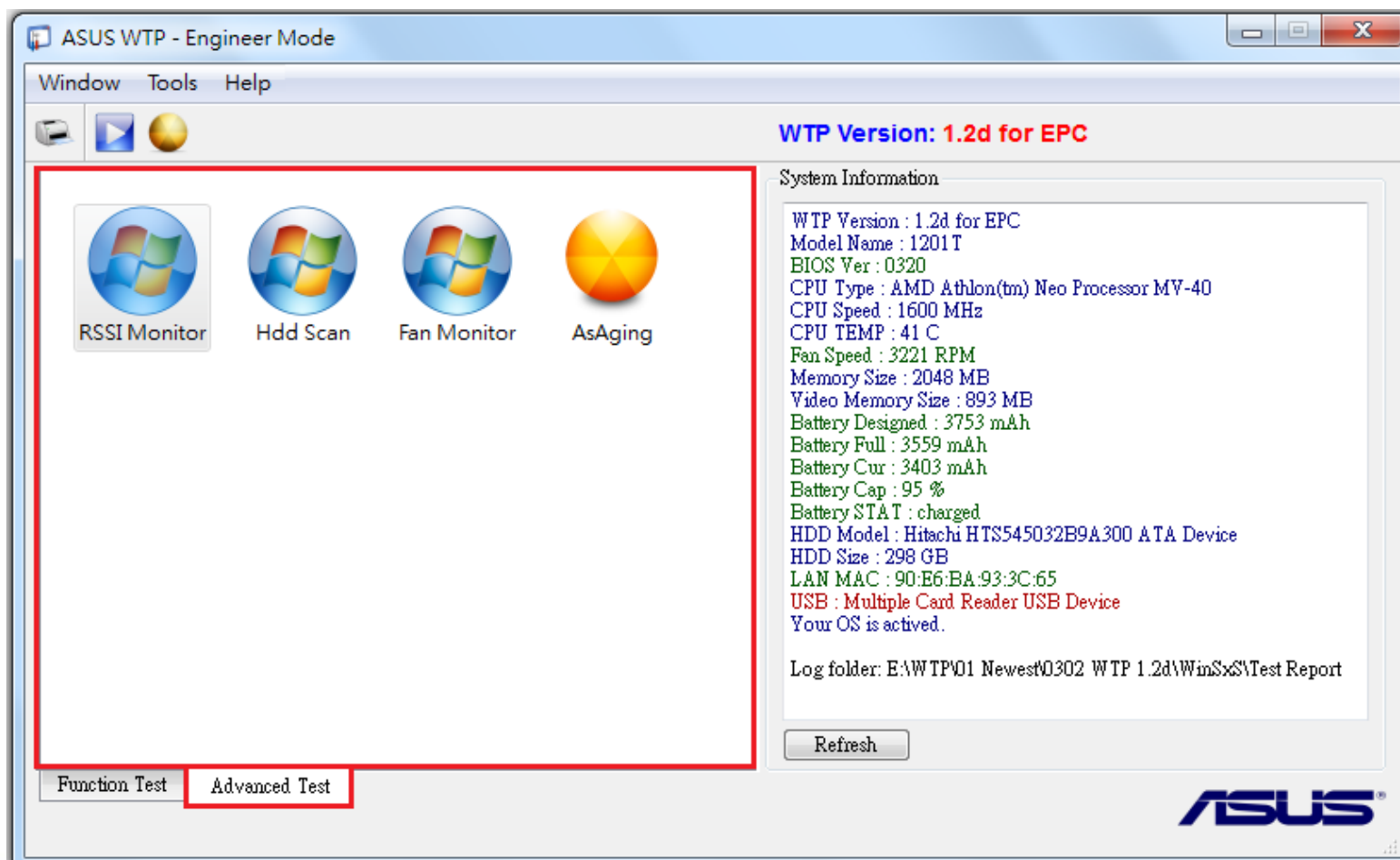


Open file to check test result. (Test Report\Detailed report\SN.pdf).



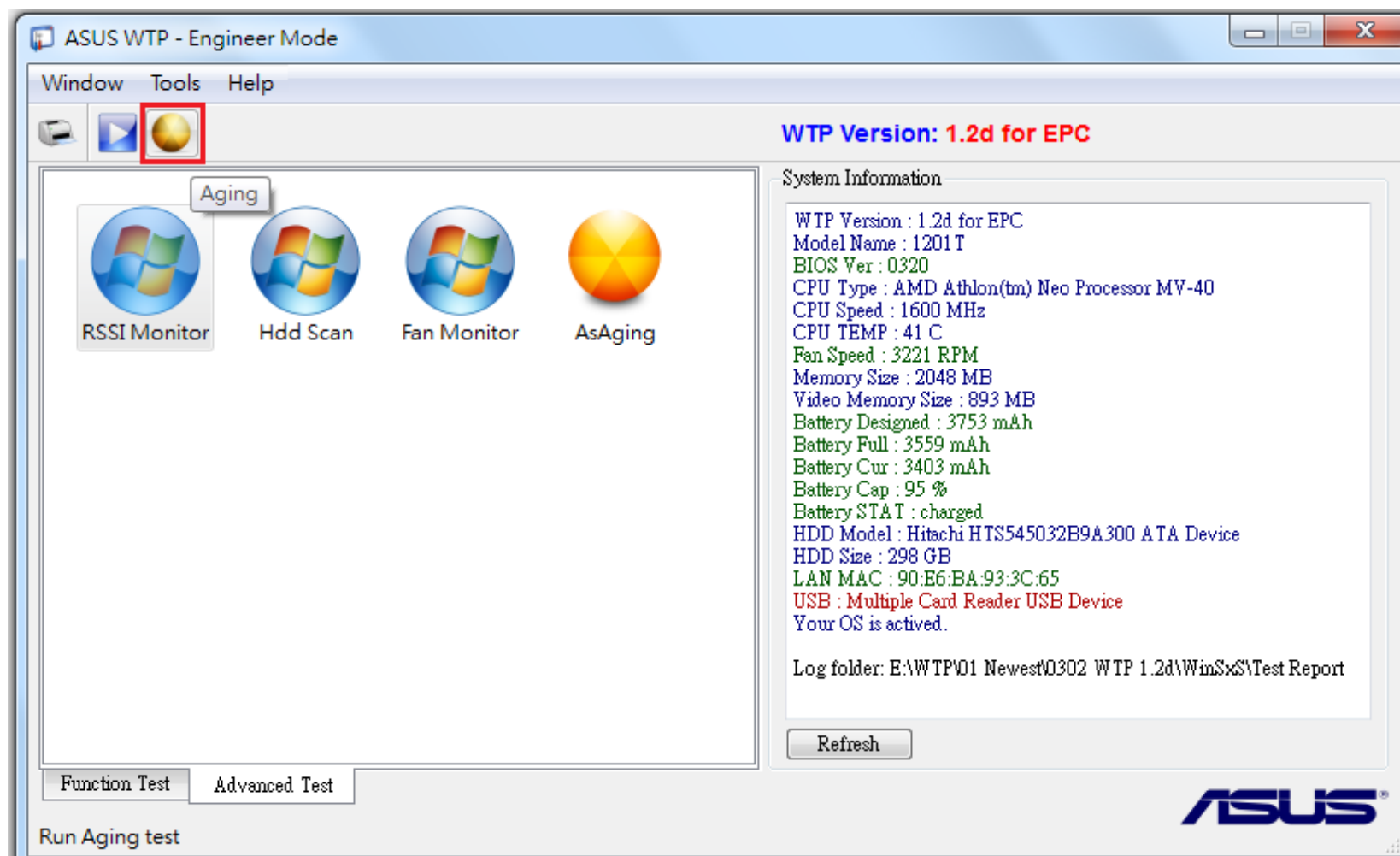
# Advance Test

We provide an interface that can link to your favorite programs. Please use the copyrighted program. We have provided a number of programs available for your use. The following describes how to add and delete programs.



# Aging Test

Aging test provides the function to set advanced test time. When the test is completed the voice and message will appear to remind the user.

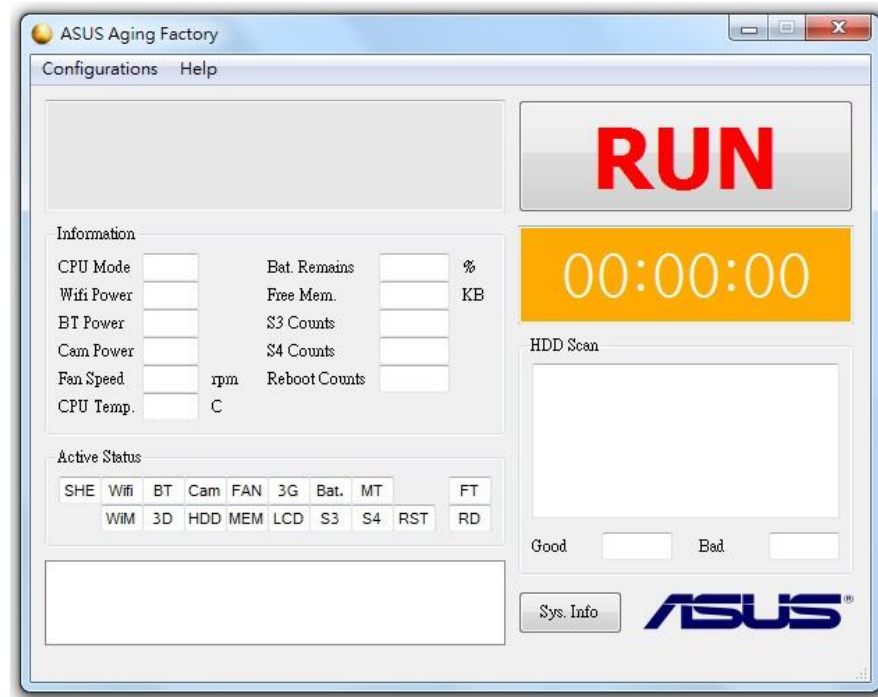
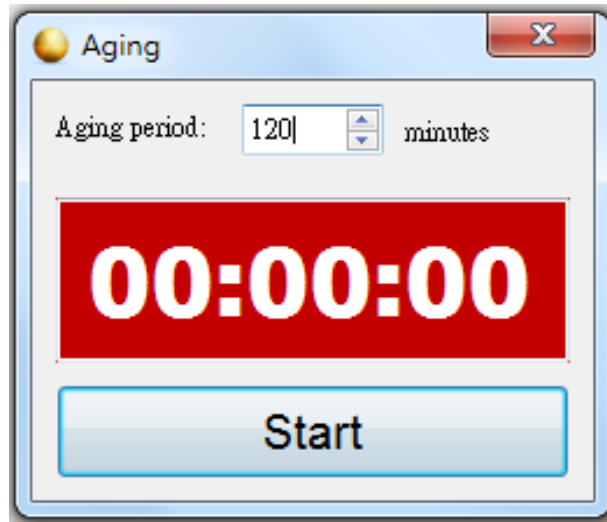




# Aging Test

## Aging Screen:

Run Aging test and set the test time, and then start the test.




Press the “RUN” button to test, more detail please refer [AsAging SOP](#).




# Chapter 8

## Seagate HDD Test Program

# Seagate HDD Test Program

Step 1: Download the Program from “Key Parts Test” on RMA Support Website.



**Service Information Portal**  
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 English







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**What's hot**  
 2010.01.07  
[MB/VGA/DT/Server weekly\(y10w01\)](#)  
  
 2009.12.31  
[MB/VGA/DT/Server weekly\(y09w53\)](#)  
  
 2009.12.24  
[MB/VGA/DT/Server weekly\(y09w52\)](#)  
  
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-  [Technical KB](#)
-  [NB Service Guide](#)
-  [Clear CMOS](#)
-  [BGA Technology](#)
-  [Repair Code](#)
-  [Technical Support \(For China\)](#)
-  [Repair Technology Express](#)

# Seagate HDD Test Program

Step 2: Check the HDD vender and SOP.

## Key Parts Test List

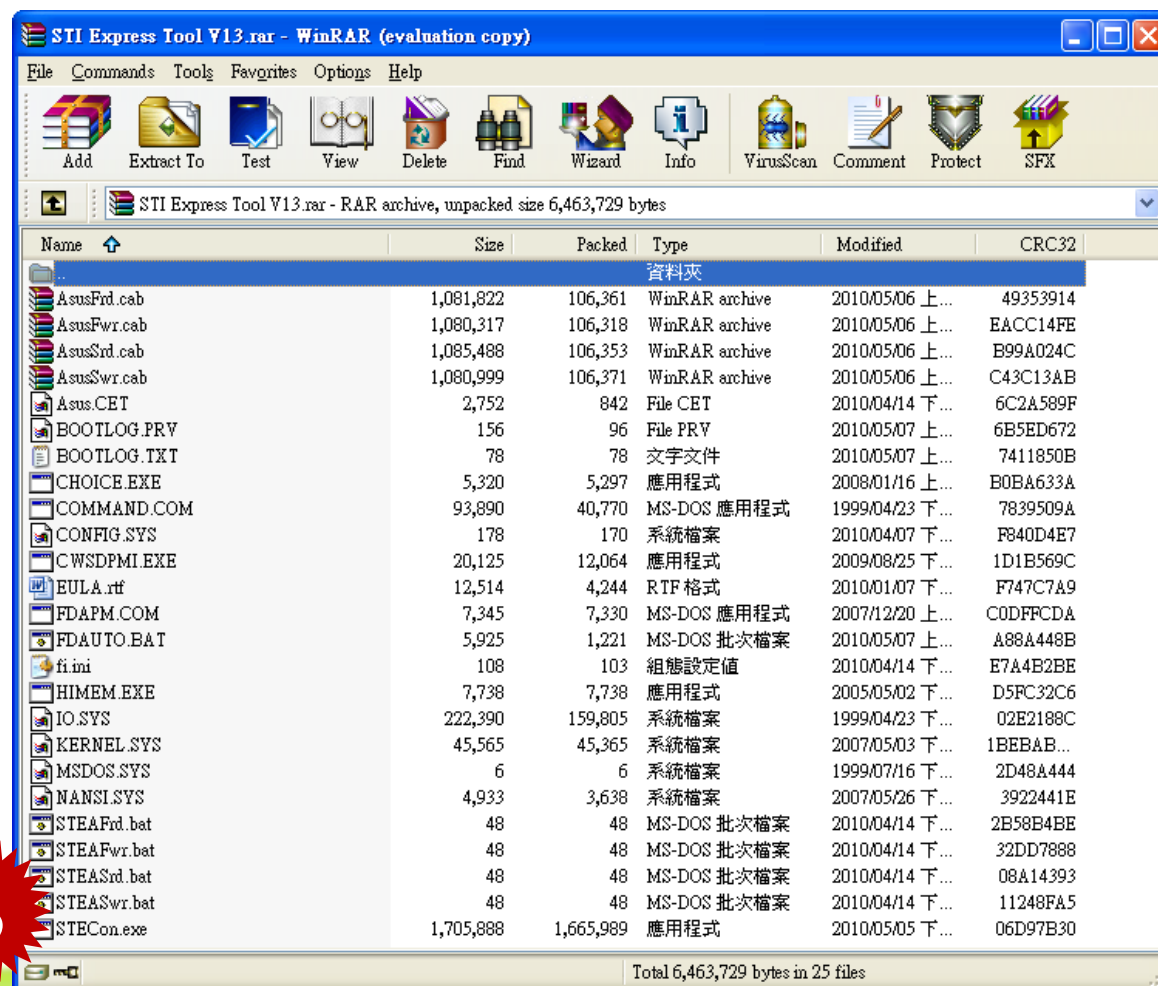
Type	Test Program	Test Environment	Test SOP	Test Tooling	Tooling Photo
ODD	 C:\Documents and Settings\michael1\zh	DOS	 C:\Documents and Settings\michael1\zh		
	 C:\Documents and Settings\michael1\zh	WINDOWS	 C:\Documents and Settings\michael1\zh		
Memory	 H:\BT3M21L\or	DOS			
HDD	Hitachi  C:\Documents and Settings\michael1\zh	DOS	 C:\Documents and Settings\michael1\zh		
	Fujitsu  C:\Documents and Settings\michael1\zh	DOS	 C:\Documents and Settings\michael1\zh		
	Seagate  C:\Documents and Settings\michael1\zh	DOS	 C:\Documents and Settings\michael1\zh		
	WD  C:\Documents and Settings\michael1\zh	DOS			
	Hitachi  C:\Documents and Settings\michael1\zh	WINDOWS	 C:\Documents and Settings\michael1\zh		
	Fujitsu  C:\Documents and Settings\michael1\zh	WINDOWS	 C:\Documents and Settings\michael1\zh		
	Seagate  C:\Documents and Settings\michael1\zh	WINDOWS	 C:\Documents and Settings\michael1\zh		

2



# Seagate HDD Test Program

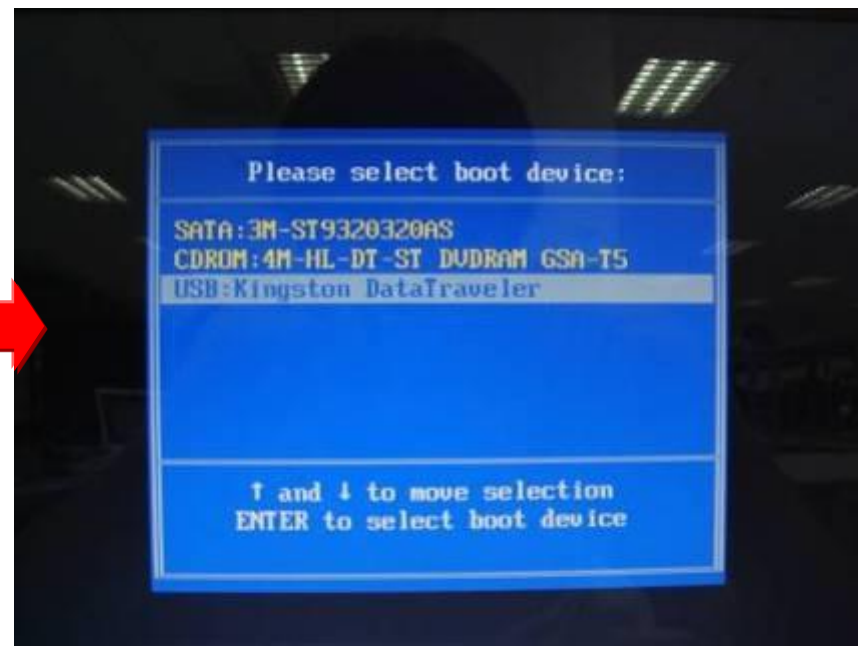
Step 3: Prepare a bootable USB disk (pen drive), extract STI Express Tool V13.RAR file and copy STI Express Tool V13 file to bootable USB disk



3

# Seagate HDD Test Program

Step 4: Please insert bootable USB disk and boot from this disk.



4

# Seagate HDD Test Program

Step 5: Enter STI Express Tool V13 data folder, and then run FDAUTO.BAT



```

C:\STIEXP~1
Name      Name      Name
..         ..         ..
command    com      himem     exe
io          sys      kernel    sys
msdos       sys      nansi     sys
asus        cet      steafrd   bat
asusfrd     cab      steafwr   bat
asusfwr     cab      steasrd   bat
asussrd     cab      steaswr   bat
asusswr     cab      stecon    exe
bootlog     prv
bootlog     txt
choice      exe
config      sys
cwsdpmi     exe
eula        rtf
fdapm       com
fdauto      bat
fi          ini

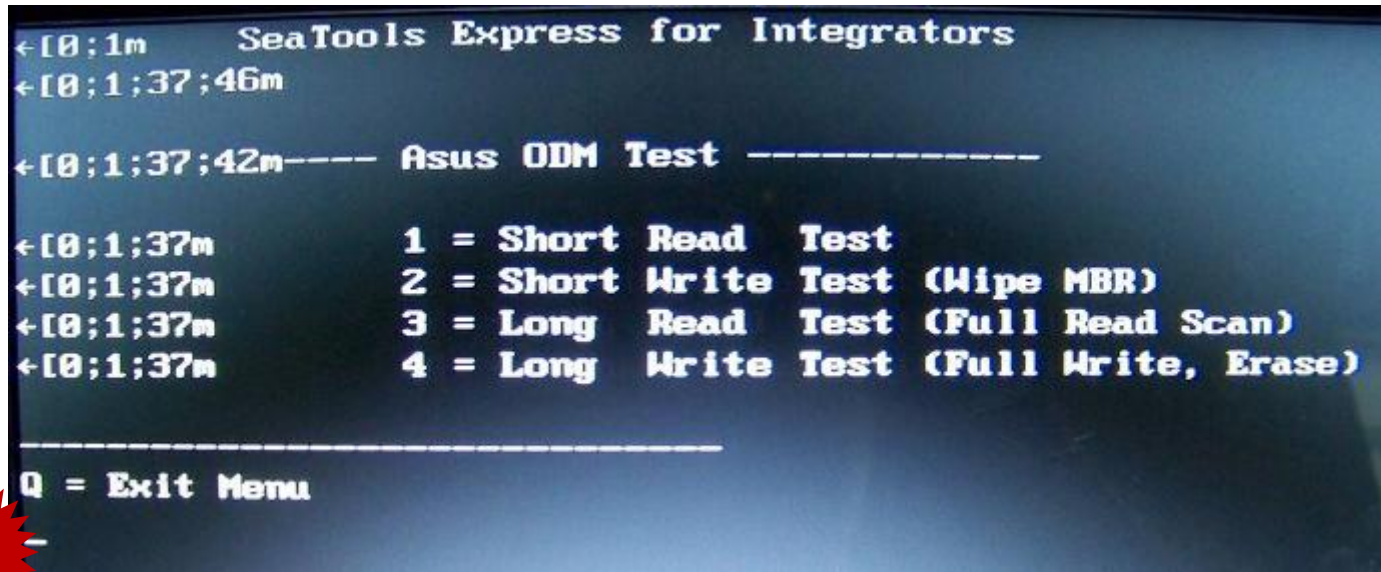
fdauto.bat      5925   5-07-10  11:56a

STIEXP~1>
1 2Right 3View.. 4Edit.. 5Memory 6DirSiz 7Find 8Histry 9EGA Ln 10Tree
  
```

5

# Seagate HDD Test Program

Step 6: There are four options



```
←[0;1m      SeaTools Express for Integrators
←[0;1;37;46m

←[0;1;37;42m---- Asus ODM Test -----

←[0;1;37m          1 = Short Read Test
←[0;1;37m          2 = Short Write Test (Wipe MBR)
←[0;1;37m          3 = Long Read Test (Full Read Scan)
←[0;1;37m          4 = Long Write Test (Full Write, Erase)

-----
Q = Exit Menu
```

6

1. Short Read test : Random read & Test time is in 30 mins;
2. Short Write test : Clear MBR sector to avoid Recovery system fail. **If perform this test, we must obtain the consent of customers.**
3. Long Read test : Sequential read at all sectors.
4. Long Write test : All data on HDD will be erased, this test can repair the logical bad sectors on HDD, but all data on HDD will be permanently erased. **If perform this test, we must obtain the consent of customers.**



# Seagate HDD Test Program

Step 7: Select Long Read Test . Waiting for the test completed, the test program will prompt “Press any key to continue”.

```
Overall Progress Completed: 98%

-----
Clear SMART Logs
-----

Clear SMART Logs by SCT 2.
SMART Status Good
Total Test Time = hrs:0.00 min:14 sec:19
=====

Overall Progress Completed: 100%

-----
Over all Status = PASSED
-----

Model Number: ST9250827AS
Serial Number: 5AG0TNJC
Passed:

按任意键继续...
```

7

# Seagate HDD Test Program

Step 8: Press the key, the result as follows

```
-----  
Overall Progress Comp  
-----  
Over all Status = PASSED  
-----  
Model Number: ST9250827AS  
Serial Number: 5RG0TNJC  
Passed :  
按任意键继续...  
+ [2J  
+ [0;1;37;42m  
*****  
***** DRIVE PASSED *****  
*****  
+ [0;1m  
按任意键继续...
```